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ORIGIN AND PRESENT STATUS OF THE EMETIN TREATMENT OF AMEBIC DYSENTERY *

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Amebic dysentery is known to be fairly common in certain parts of the United States, and as a matter of fact is more generally distributed and more frequent than is usually supposed. The treatment of this disease, in the past, has been rather unsatisfactory; but within the last two years a new treatment, namely, the hypodermic injection of the soluble salts of emetin (alkaloid), has been introduced. Since the literature bearing on this work is scattered throughout the medical journals of the world, and much of it is rather inaccessible, it is thought that a discussion of this subject will prove of interest.

THE ORIGIN OF THE EMETIN TREATMENT

Large doses of ipecacuanha have been used for many years in the treatment of dysentery, particularly by the English practitioners in India. Even before this use of the drug, Pelletier, in 1817, described an alkaloid in ipecacuanha which he called emetin. Later researches have shown that this alkaloid of Pelletier was, in reality, a mixture of three alkaloids, emetin, cephaelin and psychotrin.

Until very recent years these alkaloids have remained pharmacologic curiosities, and were not generally used in medicine. Attempts to use emetin have naturally been made from time to time. Thus Captain Douglas,[1] I. M. S., says: "It would seem that the use of emetin in dysentery is not new to therapeutics, for in 1817 Magendie and Pelletier recommended its use and L. Baidsley in 1829 obtained good results in dysentery and chronic diarrhea. That this very effectual remedy passed from the ken of medicine was most probably due to the fact that the differences between amebic and bacillary dysentery were not diagnosed." This is also probably the explanation of the failure of Walsh,[2] who used emetin mercuric iodid without result in the treatment of acute dysentery. As Walsh himself said, "it (emetin) is not proved to be much better than preparations of *Wrightia antidysenterica*, and I do not claim any preeminence for it, nor do I recommend it above other drugs. It is not even proved to be better than other drugs, which are not supposed to have any 'specific' action on dysenteric conditions."

Walsh did not state whether or not any of his cases were amebic in origin, but since he was treating acute dysentery, it is probable that the majority of his cases were bacillary dysentery. Moreover, he administered the mercuric iodid salt of emetin, which was probably not a particularly favorable preparation. These and other attempts to use emetin proved unsuccessful.

Moreover, there was a great divergence of opinion as to the value of the ipecac treatment of dysentery. Many authors lauded it as a specific, but, on the other hand, equally eminent authorities failed to obtain any results whatever from this treatment, and condemned it as unscientific and worthless.

It seemed apparent that there must have been some good reasons why authorities should, after careful trial of ipecac, arrive at conclusions diametrically opposed, and it seemed probable that this discrepancy might have resulted, both because different preparations of ipecac varied considerably in their action, and because some of the investigators had used ipecac indiscriminately in all dysenteries, whether bacillary, amebic or due to some other cause.

Experiments[3] were therefore undertaken in 1910 to determine whether or not ipecac had any decided action against either dysentery bacilli or amebas, and if such action were present, to what constituents of the ipecac this action was due.

The results of these experiments were suggestive. In brief, it was demonstrated that ipecac possessed no specific bactericidal effect against *Bacillus dysenteriae*, but that it was a powerful amebacide, the weakest preparation used killing amebas in a dilution of 1 : 10,000. It was further shown that emetin was exceedingly active, killing amebas in dilutions of 1 : 100,000, that deemitized ipecac was relatively quite inert, and that different preparations of ipecac on the market varied greatly in their alkaloidal content and amebacidal action. It was therefore suggested that the amebacidal action of any given specimen of ipecac was directly dependent on the proportion of emetin contained.

In a later publication[4] these results were reaffirmed, and it was pointed out that the greater part of the emetic action of ipecac is not due to emetin but to cephaelin, and that if emetin were amebacidal without being especially active as an emetic, we should have at our command the ideal drug for use in amebic dysentery, a drug that might prove as satisfactory as is quinin in malaria. The hope was expressed that other workers would become

* From the Department of Pathology, Army Medical School, Washington, D. C.

1. Douglas, S. R.: In discussion on treatment of dysentery, Jour. Trop. Med. and Hyg., 1913, xvi, 264.
2. Walsh: What is the Rational Treatment of Acute Dysentery? Indian Med. Gaz., September, 1891.
3. Vedder, E. B.: A Preliminary Account of Some Experiments Undertaken to Test the Efficacy of the Ipecac Treatment of Dysentery, Bulletin, Manila Med. Soc., March, 1911.
4. Vedder, E. B.: An Experimental Study of the Action of Ipecacuanha on Amoebae, Tr. Second Biennial Congress of Far Eastern Assn. Trop. Med., Hong Kong, January, 1912, p. 87; abstr., Jour. Trop. Med. and Hyg., 1912, xv, 313.

interested in the problem and verify the observations. This hope was already in the process of being realized. Lyons,[5] working independently on the same problem, had failed to find that ipecac had any amebacidal effect on amebas *in vitro*, but stated that the alkaloidal content of his preparation of ipecac was unknown. One specimen which remained was assayed and found to contain only one-fifth of the total alkaloids required by the U. S. Pharmacopeia.

Wherry's conclusion,[6] as the result of similar observations, was: "Emetin in 1 : 20,000, 1 : 100,000 and 1 : 200,000 dilutions killed the amebas in one of the five series of experiments after twenty-three hours' exposure at from 36 to 38 C. (from 96.8 to 100.4 F.). None of the dilutions was amebacidal in an hour. It seems fair to presume that when amebacidal action was manifested, the emetin acted on the trophozoites alone, and that failure to kill may be attributed to the presence of cysts."

These experiments were all performed with free-living amebas which could be cultivated. Since the parasitic amebas are far less resistant to unfavorable agencies, it was reasonable to suppose that these also would be destroyed by emetin. Rogers was attracted by Vedder's results and tested the action of emetin solutions on *Entamoeba histolytica* in dysenteric stools.[7] He found that motility ceased promptly and that destruction of the amebas rapidly followed. These experiments, however, were comparatively unimportant. I had, myself, made a few similar observations, but had not considered them of particular significance, because the parasitic amebas soon lose their motility and disintegrate rapidly even when kept in a stool or liver-pus under the most favorable circumstances, and also because, as is now generally admitted, the pathogenic *Entamoeba histolytica* has never been cultivated, and it was, of course, impossible to prove whether the amebas apparently killed by emetin were really dead or not.

The credit, however, for having first utilized the experimental results in the treatment of dysentery belongs to Rogers. He had long advocated the use of ipecac in amebic disease, and in 1907 demonstrated that the same drug would rapidly cure an amebic hepatitis in the presuppurative stage, and thus prevent the formation of amebic liver abscess. Having been convinced of the action of emetin on amebas *in vitro*, Rogers decided to use emetin hypodermically, and in June, 1912, he reported[7] two cases of severe amebic dysentery and one case of acute hepatitis which were rapidly cured as the result of this treatment.

In August, 1912, Rogers published further experiences with emetin in amebic disease, reporting twelve cases treated by this method.[8] This paper included cases of acute amebic dysentery; of chronic amebic dysentery; of acute hepatitis in which the formation of pus was prevented by the use of emetin, and of amebic abscesses of the liver cured by aspiration and injections of emetin.

This was followed by a communication[9] in October, 1912, in which he compared twenty-four cases of amebic dysentery in which soluble salts of emetin were given with thirty consecutive cases in which ipecac was used. Table 1 shows the result:

TABLE 1.—COMPARISON OF IPECAC TREATMENT OF AMEBIC DYSENTERY IN THIRTY CASES WITH EMETIN TREATMENT IN TWENTY-FOUR

	Ipecac	Emetin
Died from dysentery within three days of admission	4	2
Died over three days after admission	7	0
Died from other diseases after cure	0	2
Removed from hospital in bad condition	2	0
Left hospital unchanged or not cured	4	0
Cured	13	20
Average days in hospital of cured patients	16.4	7.2
Average days before stools became normal	11.4	2.35
Grains of ipecac or emetin to that time	406	2

These articles placed the new treatment of amebic dysentery and hepatitis by emetin on a firm basis, and excited world-wide interest. It has since been tried with practically uniform success by French, German, English, American, Italian and Spanish practitioners. The literature summarized in Table 2 includes nearly all of the reported cases up to date, but many more cases have been successfully treated without a report having been made.

It is now believed that sufficient information has been collected with regard to this treatment to warrant a discussion of the following points:

1. Is the emetin treatment really effective in the treatment of amebic dysentery?

The answer is most positive and satisfactory. As will be seen from Table 2, in 110 cases treated by this method by twenty-two observers, ninety-nine patients were clinically cured, while eleven died. The standard of cure in these cases consisted of the return to normal formed stools, and a total absence of any dysenteric symptoms. Amebas had often entirely disappeared from the stools, but in other cases were still present. The significance of amebas persisting in the stools will be considered later. Meanwhile it is important to consider the eleven fatal cases.

One case reported by Rogers,[8] Case 3, was a case of gangrenous amebic dysentery in a confirmed opium-eater. Necropsy revealed most extensive ulceration affecting the whole length of the large intestine. The caput coli was gangrenous with little but the peritoneal coat remaining. A prolonged microscopic examination of scrapings of the ulcers in various parts of the bowel failed to reveal a single living ameba, and sections through the walls of the more recent ulcers showed not a single parasite.

Two other deaths are reported by Rogers[9] in cases ending fatally within three days after admission to hospital. To one who is familiar with amebic dysentery it is apparent that patients with this disease must be in a desperate condition indeed to die within three days of admission.

Baermann and Heinemann[10] treated twenty-two cases with seven deaths, which shows beyond a doubt that their cases were also in a very advanced stage. They themselves say, "with regard to these cases, a cure could not have been effected even if the amebas were killed and the ulcers healed. . . . Even these cases were interesting, for the necropsy showed almost without exception a complete recovery of the intestine. In no case could amebas be demonstrated in the mucous membrane either in superficial ulcers or in the undermined ulcers."

Lyons[11] reported one death, but says, "In fairness, however, this case should be omitted in judging the treatment, as the patient was beyond redemption." Cases

5. Lyons: Observations on the Effect of Ipecac, Phenol and Salicylic Acid on Amoebae in Vitro, New Orleans Med. and Surg. Jour., June, 1912.

6. Wherry: The Amoebacidal Action of Emetine, Jour. Infect. Dis., 1912, x, 162.

7. Rogers: The Rapid Cure of Amoebic Dysentery and Hepatitis by Hypodermic Injections of Soluble Salts of Emetine, Brit. Med. Jour., 1912, i, 1424.

8. Rogers: Further Experience of the Specific Curative Action in Amoebic Disease of Hypodermic Injections of Soluble Salts of Emetine, Brit. Med. Jour., 1912, ii, 405.

9. Rogers: Treatment of Amoebic Dysentery, Ind. Med. Gaz., 1912, xlvii, 421; abstr., Jour. Trop. Med. Hyg., March 1, 1913, p. 72. See also Lancet, London, 1912, ii, 160.

TABLE 2.—LITERATURE ON EMETIN TREATMENT OF AMEBIC DYSENTERY

	Cases Dysentery Treated	Cures	Deaths	Cases Hepatitis Treated	Cures	Deaths
Rogers[7, 8, 9]	30	27	3	6	6	0
Baermann and Heinemann[10]	22	15	7	..	..	..
Lyons[11]	6	5	1	..	..	..
Low[12]	1	1	0	..	..	..
Chauffard[13, 14, 40]	2	2	0	2	2	0
Flandin and Dumas[15]	..	..	..	1	1	0
Dopter[16]	1	1	0	..	..	..
Job and Levy[17]	1	1	0	..	..	..
La Cava[18]	2	2	0	..	..	..
Destefano[19]	2	2	0	..	..	..
Valence[20]	1	1	0	..	..	..
Verteuil[21]	1	1	0	..	..	..
Costa[22]	..	..	..	1	1	0
Allan[23]	2	2	0	..	..	..
Dufour and Thiers[24]	1	1	0	..	..	..
Rouget[25]	..	..	..	1	1	0
Dessy and Marotta[26]	1	1	0	..	..	..
Laval[27]	1	1	0	..	..	..
Sewell[28]	..	..	..	1	1	0
Marchoux[29]	2	2	0	..	..	..
Roux and Tribondeau[30]	2	2	0	1	1	0
Gaide and Mouzels[31]	4	4	0	..	..	..
Maxwell[32]	10	10	0	..	..	..
Hutcheson[33]	11	11	0	..	..	..
Thompson[34]	7	7	0	..	..	..
Couteaud[35]	..	..	..	2	2	0
Mallannah[36]	..	..	..	1	1	0
Total	110	99	11	16	16	0

such as these eleven in which the patients were moribund should be excluded from consideration in passing on the value of a given treatment. It can be said that any amebic dysentery patient who is not moribund can be "cured" by emetin.

The rapidity of the improvement is also noteworthy. It has been customary to treat amebic dysentery for weeks or months often with little change in the symptoms. In these reported cases recovery has for the most part been so rapid as to be little short of marvelous. The effects of the treatment have been marked from the first injection; blood and mucus disappear from the stool, pain is entirely relieved, the number of stools is greatly reduced, and the patient gains rapidly in weight. In many of these reported cases the patients have obtained complete relief from their dysenteric symptoms within a week, after the use of very small amounts (from 2 to 3 grains) of emetin. In other cases, the disease has proved more resistant, and has required a longer course of treatment or the use of larger amounts of emetin to effect a "cure."

2. Is the emetin treatment effective in hepatitis?

In sixteen cases reported by nine observers, sixteen patients, or 100 per cent., were "cured."

The use of the word "cured" in these cases is less objectionable than is usually the case, for not only have the patients obtained complete relief from the symptoms of the abscess, but the discharge has ceased, the wounds have healed, and in one or two cases[14] a subsequent Roentgen examination has indicated that the abscess cavity had entirely disappeared. Moreover, these cases up to date have shown none of that tendency to recurrence which is so frequent after surgical treatment and evacuation. Several of these cases were treated before suppuration occurred[7, 8] several after the formation of pus and without evacuation,[36] and several after evacuation of pus by rupture into the lung or the intestine.[15, 22] Several of these cases had been treated surgically and by the use of other drugs, such as quinin irrigations into the abscess cavity, without effect, and were considered as rather hopeless cases before emetin was tried.[28]

The uniform success reported in these cases is quite remarkable, since the mortality following liver amebic abscess has, in the past, been high, having been estimated at from 80 to 30 per cent., depending on the method of treatment. Müller[37] has recently reported twenty-four cases treated surgically, in which six patients (25 per cent.) died. This may be taken as representing the average result of good surgical treatment, and it is clear that the use of emetin in this condition is a therapeutic triumph.

3. Are these cases permanently cured? Amebic dysentery is notorious for its tendency to relapse. Patients recover only to develop a fresh exacerbation or perhaps a liver abscess after weeks or months of apparent freedom from the disease. Moreover, the patients that have been treated by emetin have in many cases continued to harbor amebas in the feces. Baermann and Heinemann used enormous doses of emetin without succeeding in finally eradicating the amebas from the feces although the patients were quite well. I have, myself, observed the same result in several cases in which the success of the emetin treatment was unquestionable. This result might, as a matter of fact, be expected, for no matter how poisonous the emetin in the circulation may be to the amebas in the tissues, the amebas in the lumen of the intestine, being to all intents and purposes outside of the

10. Baermann and Heinemann: Die Behandlung der Amoebendysenterie mit Emetine, München. med. Wchnschr., 1913, lx, 1132 and 1210.

11. Lyons, Randolph: The Treatment of Amoebic Dysentery with Subcutaneous Injections of Emetine Hydrochlorid, THE JOURNAL A. M. A., April 19, 1913, p. 1216.

12. Low: The Administration of Emetine by Mouth in Amoebic Dysentery, Brit. Med. Jour., 1913, i, 1369.

13. Chauffard: Abcès dysentérique du foie ouvert dans les bronches; guérison rapide par l'émétine, Bull. et mém. Soc. méd. d. hôp. de Paris, 1913, Series 3, xxxv, 630.

14. Chauffard: Dysentérie amibienne chronique, guérison rapide par la cure d'émétine, Bull. et mém. Soc. méd. d. hôp. de Paris, 1913, Series 3, xxxv, 753.

15. Flandin and Dumas: Gros abcès dysenterique du foie ouvert dans les bronches; guérison obtenue par le traitement chirurgical et les injections de chlorhydrate d'émétine, Bull. et mém. Soc. méd. d. hôp. de Paris, 1913, Series 3, xxxv, 599.

16. Dopter: Discussion of case of Flandin and Dumas (Footnote 15).

17. Job and Levy: Un cas de dysentérie amibienne chronique, traité par l'émétine, Bull. et mém. Soc. méd. d. hôp. de Paris, 1913, Series 3, xxxv, 988.

18. La Cava: La chemioterapia della disenteria da ameba; due casi curati col cloridrato de ametina secondo il metodo di L. Rogers, Malaria, etc., Roma, 1913, iv, 189.

19. Destefano: Dos casos de disenteria tratados con el metodo de Rogers, Semana méd., 1913, xx, 1189.

20. Valence: Rectite dysentérique et chlorhydrate d'émétine, Bull. méd., Paris, 1913, xxvii, 579.

21. Verteuil: Note of a Case of Amoebic Dysentery of Three and a Half Years' Duration, Rapidly Cured by Injections of Emetine Hydrochloride, Lancet, London, 1913, i, 1803.

22. Costa: Abcès amibiens du foie, partiellement ouverts dans les bronches et dans l'intestin, guérison par les ponctions et les injections d'émétine, Bull. et mém. Soc. méd. d. hôp. de Paris, 1913, Series 3, xxxv, 746.

23. Allan, William: The Emetin Treatment of Amebic Dysentery, THE JOURNAL A. M. A., March 1, 1913, p. 664.

24. Dufour and Thiers: Dysentérie chronique amibienne traitée par le chlorhydrate d'émétine, Bull. et mém. Soc. méd. d. hôp. de Paris, 1913, Series 3, xxxv, 827.

25. Rouget: Abcès amibien du foie traité par la ponction evacuatrice et les injections sous-cutanées d'émétine; guérison, Bull. et mém. Soc. méd. d. hôp. de Paris, 1913, Series 3, xxxv, 809.

26. Dessy and Marotta: Contribucion al tratamiento de la enteritis disenterica y del abceso del higado (amibiano) con el metodo de Rogers, Semana médica, 1913, xx, 797.

27. Laval: A propos du traitement de la dysentérie par les injections de chlorhydrate d'émétine, Bull. méd., Paris, 1913, xxvii, 171.

28. Sewell: Liver Abscess and the Emetine Treatment, Jour. Roy. Army Med. Corps, June, 1913, p. 700.

29. Marchoux: Le chlorhydrate d'émétine dans la dysentérie amibienne, Bull. Soc. path. exot., 1913, vi, 313.

30. Roux and Tribondeau: Action de l'émétine dans quelques formes speciales d'amibism et par analogie avec d'elles dans la syphilis, Bull. Soc. path. exot., 1913, vi, 424.

31. Gaide and Mouzels: Note sur le traitement de la dysentérie amibienne par l'émétine, Bull. Soc. path. exot. 1913, vi, 491.

32. Maxwell, J. P.: The Use of Emetine Salts in the Treatment of Amoebic Dysentery, China Med. Jour., 1913, xxvii, 116.

33. Hutcheson: Results in Thirteen Cases of Dysentery Treated with Emetine, China Med. Jour., 1913, xxvii, 243.

34. Thompson: The Treatment of Dysentery by Injections of Emetine Hydrochloride, Dublin Jour. Med. Sc., Aug. 3, 1913, p. 102.

35. Couteaud: La chirurgie, l'émétine et l'epeca dans le traitement des abcès du foie, Bull. et mém. Soc. de Chir. de Paris, 1913, xxxix, 941.

36. Mallannah: Emetine and Liver Abscess, Indian Med. Gaz., 1913, xlviii, 331; Brit. Med. Jour., 1913, i, 1206.

37. Müller: Die Diagnose und Behandlung des dysenterischen Leberabszesses, Arch. f. Schiffs- u. Tropen-Hyg., 1913, xvii, 289, 335.

body, would not be subjected to its action. Now if amebas are still present in the patient's intestinal canal, what is to prevent a reinfection, even if every ameba in the tissues is killed? To this question no satisfactory answer can be given at present, but there are several points that may be noted. In the first place the observers who have so far reported these cases have not stated that *Entamoeba histolytica* was found in the stools after the emetin treatment. The fact that patients may harbor a double infection of *Entamoeba histolytica* and *Entamoeba coli* should not be forgotten. *Entamoeba coli* is a harmless commensal. We should not expect to remove it by the emetin treatment, nor is its continued presence of any significance. As I have satisfied myself in at least three cases, however, *Entamoeba histolytica* has remained, chiefly in the encysted form, in the feces, after treatment by emetin had dissipated all dysenteric symptoms, and after rectal examination had demonstrated that the ulcers previously present in the rectum were healed. Further, Walker's results[38] indicate that in such cured cases of amebic dysentery the patients continue to harbor *Entamoeba histolytica* for years and in fact become carriers of this infection. Thus Walker says, "None of the twenty experimentally infected or of the nine naturally infected men has ceased to be a 'carrier' of the *Entamoeba histolytica*, although some of them have been under observation for over two years."

The actual final results of the emetin treatment may prove to be much more satisfactory than these theoretical considerations would lead us to expect. For while these patients of Walker's continued to harbor *Entamoeba histolytica* for these long periods, he says specifically in the protocols of his experiments that these men developed no symptoms of dysentery after the primary attack had been cured by the administration of ipecac. In other words, it has been demonstrated that a man may continue to pass *Entamoeba histolytica* in his stools as long as two years and four months without ever developing any symptoms of dysentery. It would appear from this observation that, contrary to general belief, a man who has entirely recovered from amebic dysentery may be protected, in some way, against reinfection. The relapses that have been so frequent in this disease in the past may have been due to the fact that all the amebas in the tissues were killed in but few cases, and that the few remaining amebas subsequently caused the relapse. The final proof as to whether or not patients treated by emetin will remain "cured" can be determied only by observing these cases for a number of years. None of the cases so far reported fulfil this requirement. Through the courtesy of Lieut. Edgar F. Haines of the Medical Reserve Corps, however, I am enabled to report two cases in which the patients have remained well for periods of five and nine months. Lieutenant Haines treated these cases, and very kindly sent me the following notes:

CASE 1.—Miss M., aged 34, school teacher, who had been in the tropics five years, in 1909 had had amebic dysentery and was treated at that time by quinin irrigations, since 1909 has had three or four attacks, each lasting from four to six days. In the latter part of February, 1913, she had another attack of diarrhea, which had lasted nearly two weeks when I was called to see her. Again she asserted that this was due to eating a certain fruit, which, she said, always brought on her trouble. Examination of the stools showed the presence of *Entamoeba histolytica* in large numbers. Emetin treatment was begun at once, ½-grain doses being used, one dose night and morning. Five grains were used in this case all told. All dysenteric symptoms cleared up immediately. Patient gained weight and was looking much better on my departure from the Philippine islands, April 19, 1913. Word received from this patient in August stated that she had had no recurrences and was in excellent health. Patient was up and about during treatment.

CASE 2.—Mrs. H., aged 26, who had been in the tropics two and one-half years, and had been absolutely well during this time, in September, 1912, was taken with abdominal pains and frequent stools containing blood and mucus. She lost 10 pounds and became very anemic. On account of station, no microscopic examination of feces was made at this time. Ipecac was given with moderately good results. Pain ceased and stools became practically normal. In October, 1913, the patient had another attack similar to the one stated above; examination of the stools at Tien Tsin, China, failed to show the presence of amebas. It was advised that bismuth subnitrate be used; poor results were obtained from this treatment. For two or three days there would be an apparent improvement, then a relapse to former condition. This kept up until January, 1913, with periods of remission. By the latter part of January the patient had lost nearly 20 pounds, looked very anemic, was exceedingly weak, and was having three or four bloody stools a day. Examination of the stools made by Lieut. T. D. Woodson at the Division Hospital, Manila, P. I., and confirmed by myself, showed the presence of *Entamoeba histolytica* in large numbers. The patient was admitted to the Division Hospital, Manila, about Feb. 1, 1913. She could not retain ipecac. Bismuth subnitrate was used with no results. Emetin hydrochlorid (Merck) was begun about February 10, used hypodermically in ¼-grain doses, two doses a day, night and morning, until 3 grains had been taken. At the end of this time an opposite condition existed from a dysenteric one. The patient was up and about the third day after emetin treatment was stopped, and left the hospital on the fifth day. There was a slight recurrence one week after leaving hospital. Two ½-grain doses of emetin were given. All symptoms cleared up immediately. There has been no relapse since, up to the end of October (date of report). Weight is normal, no anemia and no pain are present, the stools are normal, and the patient feels fine. A total of 4 grains was used.

It may therefore be said that there is at least a possibility that some of the "cures" reported as a result of the emetin treatment of amebic dysentery may be permanent.

4. Have there been any ill effects following the emetin treatment?

In most of the reported cases the drug has been given hypodermically. Rogers[8] began by giving ⅓-grain doses, but rapidly increased them to ½ or ⅔ grain. These doses produced no ill effects. A number of observers have given as high as 1 grain at a single injection, with no bad systemic results, and Allan[23] on one occasion administered 4 grains of emetin hydrochlorid at a single dose. This caused nausea for several hours with vomiting once.

Baermann and Heinemann[10] say: "When the subcutaneous dose was increased from 120 to 150 mg. (from 2 to 2½ grains) in daily repeated injections, indisposition, weariness and loss of appetite were experienced. These phenomena disappear in from twenty-four to forty-eight hours after the use of emetin." Almost all of the observers who have used the larger doses have reported that they were painful. Intramuscular injections have been more painful than subcutaneous.

Intravenous injections have also been used. Rogers[39] reported the use of 1 grain intravenously with no bad results. Baermann and Heinemann say:

38. Walker, E. L.: Experimental Entamoebic Dysentery, Philippine Jour. Sc., 1913, viii, Sec. B., 253.

39. Rogers: The Rapid and Radical Cure of Amoebic Dysentery and Hepatitis by the Hypodermic Injection of Soluble Salts of Emetine, Therap. Gaz., 1912, Series 3, xxviii, 837.

Intravenous injection of from 60 to 200 mg. caused no serious disturbance but slight dizziness, disturbance of vision and slight vomiting. When from 300 to 400 mg. were injected, we observed very serious symptoms, which began in from two to five minutes after the injection and consisted of general vascular paralysis, severe dyspnea, loss of consciousness with vomiting and passage of thin stools and great slowing of the pulse. We estimated the maximal intravenous dose as 250 mg. per 60 kg. of body-weight.

Since emetin, by many observers, has been regarded as a more or less harmless drug, and since I am of the opinion that the doses used by some and particularly by Baermann and Heinemann are too large, I wish to point out the possible danger in not using due caution in the use of this very potent remedy.

Sollmann,[40] with regard to ipecacuanha, says:

Central symptoms make their appearance after large doses. Paralytic symptoms set in, among the earliest in mammals being vasomotor paralysis with fall of blood-pressure. This is further aided by weakening of the heart-muscle due to its direct muscle action. . . . Some persons are so sensitive to the local action of ipecac that the opening of a jar at a distance of several feet will produce violent sneezing and discomfort. . . . Cephaelin is far more emetic, *but emetin is much more depressing.*

Capt. Henry J. Nichols of the Medical Corps and I have found that 2.5 mg. per kilogram of emetin hydrochlorid intravenously is the minimum fatal dose for rabbits, while one rabbit died as the result of 20 mg. per kilogram administered subcutaneously. The rabbits to which the drug was given intravenously died in a few seconds, apparently as the result of centric paralysis. The subcutaneous and intramuscular injection of large doses caused considerable local irritation and even necrosis, particularly of the muscular tissue. I have found that 10 mg. of emetin hydrochlorid per kilogram subcutaneously on two successive days is a uniformly fatal dose for white rats. It would appear from these observations that the doses proposed by Baermann and Heinemann are far too large, and that if the drug is administered in such doses, fatalities will soon occur which will unjustly discredit the use of emetin. Furthermore, these tremendous doses appear to be entirely uncalled for, since success is commonly obtained in the treatment of amebic dysentery and hepatic abscess with doses not exceeding 1 grain (64 mg.) hypodermically. As has already been pointed out, it cannot be expected that the amebas in the stools will disappear even as the result of such heroic doses, and this should no longer be attempted.

5. What is the best method of treating amebic dysentery and hepatitis by emetin?

Theoretically, the intravenous method offers certain advantages, such as the prompt introduction of the drug into the circulation, and the possibility of accurately standardizing the dose. An irritating drug like emetin is of necessity slowly absorbed when injected subcutaneously. On the other hand, hypodermic medication is easier both for patient and physician, and, what is more important, safer. After seeing rabbits die immediately after intravenous injections of comparatively small amounts (from 3 to 5 mg.) of emetin hydrochlorid, I should hesitate before administering even 1 grain intravenously in a human case. If given to one of the patients so susceptible to the effects of ipecac mentioned by Sollmann, such a treatment would not improbably be followed by death. Several successful cases are reported[12, 39] in which the emetin was given by mouth. I have treated one case by this method without obtaining the striking results that follow the hypodermic use of emetin. The hypodermic method is therefore recommended.

Emetin hydrobromid and hydrochlorid have both been used, but the burden of evidence appears to favor the hydrochlorid, which is more soluble. This salt is on the market in the form of powder and ampules. The former the physician can prescribe to be put up in capsules, pills or in solution with sterilized water when indicated.

The customary procedure has been to administer doses varying from ⅓ grain to 1 grain daily for about ten days. Inasmuch as the larger doses are distinctly irritating, it appears preferable to me to give ⅓ grain three times a day for about ten days. In this manner a large amount of the drug can be administered without serious inconvenience of any kind. Vomiting has never been reported from the use of emetin in this dosage, and the patients feel no general disturbance. On the contrary, they usually experience the first sensations of well being that have been enjoyed for months. After such a course if the patient is clinically cured, the treatment should be suspended, and the patient's stools watched for *Entamoeba histolytica*. Any recurrence of dysenteric symptoms should be the signal for the prompt initiation of a second course of treatment. If the patient's stools have not become normal under this treatment, larger doses may be employed. Emetin at present is quite expensive, costing about fifty cents a grain.

Cases of amebic liver-abscess should be treated with emetin in the same manner and about the same dosage. If results are to be satisfactory, the diagnosis must be certain, for while emetin appears to be a true specific, and directly toxic toward amebas, its use in abscesses of bacterial origin will be unavailing.

Moreover, in cases of abscess with large accumulations of pus, although the amebas will be killed by the emetin, it cannot be expected that this pus will be absorbed. It is believed, therefore, that in case an amebic abscess has not ruptured spontaneously into the lung or intestine, exploratory puncture should be practiced. If pus is found, and amebas are demonstrated, the opening should be enlarged sufficiently to permit the abscess to be evacuated, and emetin should at once be administered. Since experience has shown that the emetin produces a prompt cessation of discharge, and completes the cure in a few days, it is no longer necessary to perform operations such as the best surgical practice now requires in order to secure free drainage. All that is necessary is to secure an evacuation of the pus present and to secure drainage for a few days. Possibly the old method recommended by Manson,[41] which has now given way to more complete surgical operations, may be advantageously reintroduced.

6. The treatment of carriers.—As previously pointed out, a large percentage of the patients with amebic dysentery so treated become chronic carriers of encysted amebas. In addition to the fact that, so far as we know at present, they are subject to reinfection, it seems probable that these cases are a menace to the community. Walker says:

In consequence of the extremely feeble resistance of the motile *Entamoeba histolytica* to external influences, it is not considered that cases of acute entamebic dysentery are an important source of infection. On the other hand, it is believed that chronic and latent cases of this disease are the

40. Sollmann: Text-Book of Pharmacology, p. 309

41. Manson: Tropical Diseases, Ed. 4, p. 516.

chief, if not the exclusive source of infection in endemic regions, first, because of their relative prevalence; secondly, because this condition persists indefinitely; thirdly because their infection is unsuspected, and fourthly, because these "carriers" are constantly passing in the stools, often in enormous numbers, the resistant encysted stage of *Entamoeba histolytica*.

It is apparent that it is desirable for both personal and public reasons to rid these carriers of their infection. The emetin treatment fails to do this. Chauffard[40] attempted to destroy these amebas by giving an irrigation consisting of 100 mg. of emetin hydrochlorid dissolved in a liter of water. The result was very bad, being followed in the next twenty-four hours by fourteen liquid stools containing mucus and blood. Chauffard apparently considered this as a recrudescence of the previously cured dysentery, but it seems much more probable that these dysenteric symptoms were due to the irritating effect of the emetin. Emetin, therefore, should not be used for this purpose. My own investigations have shown that both quinin and silver nitrate are powerful amebacidal agents. The reason that irrigations with these drugs have usually failed in the past to cure dysentery has been that they did not reach the amebas in the tissues. Since, in the cases under consideration, the amebas in the tissues have all been killed by emetin, it seems probable that these carriers may be rid of their infection by repeated high irrigations of quinin and silver nitrate prepared and given as described by authorities on the treatment of amebic dysentery. If, as Walker maintains, dysentery is propagated almost solely by these carriers, careful observation and treatment of each case in this manner will not only eliminate the chances of recurrence in that individual, but, in the course of a few years, will greatly reduce the general incidence of this disease or perhaps even eradicate it.

7. *The use of emetin in other diseases.*—The results of the use of emetin in amebic disease have been so marvelous that there has been a natural tendency to extend this treatment to other diseases. Milian[42] suggested that since salvarsan is a powerful specific against syphilis, and has also been found to cure amebic dysentery, perhaps the reverse might be true and emetin might be a valuable drug in syphilis. He reported several cases of syphilis treated by emetin with more or less equivocal results. Roux and Tribondeau[20] also treated a case of syphilis with negative results. Experiments performed in this laboratory by Captain Nichols and myself have shown that intravenous injections of large doses of emetin hydrochlorid have no effect on the spirochetes in the chancre of a rabbit experimentally infected with syphilis. Captain Nichols has found that similar injections have failed to protect rabbits from developing rabies. My original experiments showed that no effect could be expected from emetin in bacillary dysentery. On the other hand, these experiments indicated that emetin killed one of the free living paramecia *in vitro*, and there is a possibility that this drug might be useful in dysentery caused by *Balantidium coli;* but so far as I am aware this possibility has not been tested clinically. Experiments, which I have performed in this laboratory, indicate that emetin is very slightly toxic for certain trypanosomes, but that the course of the infection cannot be influenced in experimental animals by anything less than fatal doses. Its use in such infections is therefore not very promising. It appears, therefore, that emetin is highly specific for amebas and possibly some other protozoa, and has little or no action against bacteria or spirochetes.

42. Milian: Le 606 est un specifique puissant de la dysentérie amibienne, et l'émétine peut-être est un medicament antisyphilitique Bull. et mém. Soc. méd. d. hôpitaux de Paris, 1913, Series 3, xxxv, 626.

CONCLUSIONS

1. Emetin is a true specific in amebic dysentery and hepatitis, and the results obtained by its use compare very favorably with the results obtained with salvarsan in syphilis.

2. The hypodermic use of the hydrochlorid salt is the preferred method of treatment.

3. A large percentage of the cases so treated continue to harbor *Entamoeba histolytica* (often in the encysted and most dangerous form) in the feces for some time.

4. While in view of this fact it is impossible to state at present that patients treated by emetin will remain permanently cured, yet the prospects of obtaining permanent cures by this method are encouraging.

5. The presence of a considerable number of these chronic ameba carriers constitutes a sanitary menace to the community.

6. It is possible that the amebas may be removed from these carriers by a course of irrigations of quinin or silver nitrate.

7. Experiments have failed to show that emetin possesses any marked therapeutic virtue in bacillary dysentery, syphilis, rabies or trypanosomiasis.

ADDENDUM.—Since this article was written, James[43] has examined the *Amoeba histolytica* in the stools of cases of amebic dysentery before and after the use of emetin. The specimens were fixed and stained. Marked degeneration of the nucleus and cytoplasm of the amebas was demonstrated after the use of emetin. This constitutes additional evidence as to the specific action of emetin on *Entamoeba histolytica*.

Dopter[44] has reported five cases of amebic hepatic abscess and forty-six cases of amebic dysentery, all successful. He notes that:

1. Emetin is of no use against lesions caused by other parasites.

2. It does not prevent relapses. Of the 46 cases, 10 have already relapsed. Two cases in 30 days, 3 after 3 months, 5 after 4 to 6 months. These relapses yield easily to a second treatment of emetin.

3. Abscess of liver may also appear after an apparent cure by emetin without fresh intestinal symptoms.

4. Emetin, so specific for vegetative amebas, appears to be devoid of power against the cysts.

Major Hartsock, M. C.,[45] reports three further cases of amebic dysentery also successfully treated by emetin hydrochlorid.

43. James: Am. Jour. Tropical Dis. and Preventive Med., 1913, i, 431.
44. Dopter: Bull. de l'Acad. de méd., Paris, 1913, lxx, 442.
45. Hartsock: Mil. Surgeon, 1913, xxxiii, 517.

Trypsin and Amylopsin in Malaria.—According to Major F. W. Lambelle, the experience in China and India is that quinin is not a specific for malaria in all its forms. In his statement in *Public Health Reports*, Jan. 3, 1914, Lambelle states that patients frequently return to the hospitals, deaf from cinchonism, still ill from the fever, and showing traces of parasites in the peripheral blood. Lambelle, therefore, has used trypsin and amylopsin in the treatment of these cases, according to the suggestion of Beard. The preparations of these drugs are sterilized, and injections are made into the muscles of the buttock. The injection is given slowly, and some swelling remains for from twelve to twenty-four hours. In the cerebral type of fever, the headache vanishes, the skin becomes moist and the temperature falls in a few hours. A single injection is said to clear the peripheral blood of parasites; three injections, at intervals of about four days, are in most cases necessary to effect a cure.

THE FUNCTIONAL METRORRHAGIAS

THEIR NATURE AND CONTROL*

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In the entire range of our daily gynecologic experience there is probably not another manifestation with which we are more familiar and of which we understand less than a bleeding uterus. Time-honored dogma has so habituated us to accept every concomitant pathologic element as the immediate and direct cause of the bleeding, that we have become entirely oblivious to the existence and significance of certain intrinsic intermediary factors that essentially link cause to effect and reveal the "why and how" of the uterine hemorrhage in logical sequence.

When a bleeding uterus presents a small fibroid, we seek no further for an explanation, and yet no one has definitely explained why one uterus harboring a fibrous nodule bleeds excessively, while another bearing enormous masses of a similar nature does not bleed at all. Still less do we know why there is bleeding from those uteri that present no palpable evidence of any causative factor whatsoever, and lastly, we know nothing of why and how the uterus bleeds during normal menstruation.

This is a very extensive theme, and the obvious limitations of the moment prompt me to plunge at once to the practical core of our subject by assuming that we are summoned to control a case of excessive uterine hemorrhage.

Our examination of the patient may reveal what we interpret as a cause for the bleeding, either pelvic or systemic; on the other hand, the most painstaking investigation may fail to develop any such cause, and these are the cases specifically embodied in the title of this paper. In either event, whether the cause of the hemorrhage is apparent or not, we promptly inaugurate the same venerable therapeutic triad, ergot, packing, and lastly but inevitably, the curet. The bleeding may cease and again it may not, in which event we shall probably renew and repeat our efforts along the same lines, ringing the changes among the alluringly named uterine styptics, until the persistence and gravity of the hemorrhage leaves us no choice but hysterectomy. This, of course, conquers the hemorrhage and removes all the evidences of our therapeutic impotence with the bleeding organ; but our clinical conscience may be much disturbed when the pathologist quietly informs us that we have deprived our patient of a normal uterus.

Two questions will naturally present themselves:

1. Why did this uterus bleed so persistently?
2. Why have we failed to control the bleeding?

The current literature teems with explanations. Every anatomic element of the female generative organs has been charged and acquitted as the causative factor: the endometrium, the adnexa, the myometrium and the uterine blood-vessels. We have scraped these uteri for endometritis and found only the hitherto misinterpreted morphologic changes in the endometrium, normal to the different stages of the menstrual cycle. We have removed diseased adnexa — and sometimes normal ones — and the bleeding continued or recurred. We have had fibrotic and endarterial degenerations in the myometrium of these uteri demonstrated, only to find the same alterations in non-hemorrhagic senescent uteri, and thus, all along the line, one after another of the alleged etiologic factors failed to exhibit that uniform synchronism with the hemorrhage essential to establish a direct relationship of cause and effect, so that, in the present state of our knowledge and according to all tenets of clinical nomenclature, the title of functional metrorrhagia is justified.

These cases occur most frequently, but not exclusively, at the two extremes of menstrual life; and while their diagnosis obviously rests on the exclusion of every demonstrable exciting factor, such an exclusion is not always possible under ordinary conditions, for there exist fundal polypi or short pediculate submucous myomas in the cornual recesses of the uterine cavity, and more important, certain forms of adenocarcinoma limited to the upper endometrial zone, the recognition of which is made possible only by a vaginal section of the cervix or, in other words, by a vaginal explorative hysterotomy.

To establish the functional nature of the condition is to establish a favorable prognosis; for, notwithstanding the persistence and gravity of the hemorrhage, it is well to bear in mind that most of these patients will tend toward recovery after a more or less protracted period—provided that during this period, which may last several months, the bleeding can be held within safe limits. It is axiomatic that every clinical manifestation represents a normal function perverted or diverted, and every therapeutic effort must be based on the normal mechanism of that function. Coagulation is Nature's universal hemostatic, and every effort to control bleeding must be an effort to induce coagulation.

I have already indicated that these hemorrhages present a perverted menstruation, and any one who has ever attempted, experimentally or otherwise, to check a normal menstrual bleeding will fully realize the therapeutic difficulties that confront us in the control of these abnormal types. It is a significant fact that, while the incoagulability of normal menstrual blood has been noted since earliest times, the identical incoagulability characterizing the cases under discussion has escaped the attention of all observers; and yet this same incoagulability in perverted protracted form embodies the etiology and dominates the treatment of the hemorrhage. The hitherto accepted teachings, attributing the absence of clotting in menstrual blood to the presence of alkaline mucus secreted by the endocervical glands, is no longer tenable, for no such admixture inhibits coagulation in other mucus-secreting areas.

It would lead far beyond the practical object of this paper to enter into the complex and important elucidation of this hematologic problem, for the details of which I must refer those specially interested to my former publications on the subject.[1] It must suffice here to state that the endometrium, during menstruation and in the hemorrhagic cases, receives normally coagulable blood from the general circulation and sheds this blood in a non-coagulable state. This loss of coagulability is not due to the absence or deterioration of any element essential to coagulation, but to the presence of an inhibiting substance that is periodically secreted by the corporeal endometrium, from which it may be expressed. Such expressed endometrical juice is capable of inhibiting coagulation in any normal blood.

* Presented before the Medical Society of the County of New York, Dec. 22, 1913.

1. Sturmdorf, Arnold: Metrorrhagia and Uterine Fibrosis, Am. Jour. Obst. and Dis. of Women, 1910, lxi, No. 6; Studies on a Local Hematologic Factor in the Causation of Uterine Hemorrhage, New York State Jour. Med., October, 1911.

The endometrium is activated to the secretion of this inhibiting substance by a hormone generated in the graafian follicles. To the present time we have not succeeded in isolating this substance, nor have we discovered its specific antagonist, but we have learned to circumvent it by effectual measures. These measures must be focused on two objective points: the regulation of the systemic blood-pressure and the inhibition of the endometrial hyperactivity.

Whenever and wherever a copious hemorrhage occurs, Nature promptly diminishes the force and volume of the general blood-current by relaxing the cardiovascular channels. Even the normally menstruating woman regularly presents a drop of from 10 to 15 points in blood-pressure at the terminal stage of her menstrual period. The metrorrhagic cases, on the other hand, especially the preclimacterics, present a persistent high pressure, ranging from 150 mm. of mercury upward.

The indication for vasodilators is obvious. Under the guidance of a reliable pressure apparatus, aconite, nitroglycerin and especially atropin should be administered until the vascular hypertension is reduced to normal. Opium is a sovereign adjuvant and is indispensable in the cases characterized by cerebral erethysm and general restlessness, which, in itself, is productive of circulatory pressure. I mention ergot in order to condemn its use in the most emphatic terms. It does not and cannot control these metrorrhagias: its specific influence on the musculature of the puerperal uterus is never realized in the non-gravid organ, while its recognized augmentation of the general vascular tension only tends to increase or prolong the bleeding. The same applies to the use of hydrastin and cotton-root bark, while stypticin (cotarnin hydrochlorid), styptol (cotarnin phthalate) and all the later synthetic oxytoxics are absolutely inert.

I cannot enter on the outlines of the local treatment without a word of warning against the prevalent indiscriminate use of the curet, which, except for diagnostic purposes, has no place in our therapeutic armamentarium for this form of hemorrhage. The curet should never be used without an obvious indication, and the existence of such an indication places the case outside of our present category, for, as already stated, these are purely functional cases, with no organic lesions and a normal endometrium, the laceration of which by the curet only augments the hemorrhage.

Two topical medicaments, the correct application of which fulfil the local indications, correcting the perverted function without destroying it — in other words, moderating the bleeding to the rhythm and proportions of normal menstruation without destroying the endometrium — will be found in pure acetone and 16 per cent. dilution of liquor formaldehydi. Either of these agents is cautiously but copiously introduced into the uterine cavity by means of an intra-uterine syringe. The syringe holds ½ to 1 ounce. The uterine end of the cannula is wrapped in a thin layer of sterile gauze and thus introduced into the uterine cavity to the fundus. A free return flow must be assured by the patency of the cervical canal, and the vagina protected from the irritating fluid by proper lubrication. The syringe is slowly emptied of its contents and carefully withdrawn in such a manner as to leave its saturated wrapping in contact with the endometrium for twenty-four hours. A daily repetition of this procedure is essential.

The hemorrhage does not cease at once, but is steadily reduced until a slight seepage, which may last several weeks, during which time treatment must be persisted in, inaugurates a normal intermenstrual period.

Should this method fail, a few applications of the D'Arsonval spark, in the manner recently adopted for the treatment of vesical papillomas, will yield the desired result.

Such, in bare outline, are the principles that govern the control of these hemorrhages. They involve innumerable details which are necessarily omitted here. We must always bear in mind that we are dealing not merely with a bleeding uterus, but with a bleeding woman. The management of these patients offers the most legitimate field for so-called medical gynecology, and their successful control will often tax the skill, the patience and the therapeutic resources of the most experienced.

It is five years since I began this study and four years since my first publication on the subject. Much has come to light during that period, yet more remains to be solved. Nevertheless, at this writing I venture to assert that no pathologist will ever again have occasion to report that I have deprived a woman of a normal uterus for the control of grave functional metrorrhagia.

51 West Seventy-Fourth Street.

NEOSALVARSAN FROM THE FRENCH POINT OF VIEW

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Since this drug is rapidly superseding salvarsan, it is essential for us to become fully conversant with it. For a number of valuable observations regarding neosalvarsan we are indebted to the French. It shall therefore be my aim to make a brief summary of these.

The usual initial dose is 0.45 gm., although some prefer to begin with 0.3 gm. Ehrlich and Hata have advised that the dose of salvarsan be fixed at 0.01 gm. per kilogram of body-weight. Since neosalvarsan contains approximately 21 per cent. of arsenic and salvarsan 31 per cent., the dose of the former can be set at 0.015 gm. per kilogram, as Leredde has suggested. Three or four injections constitute a series. It has been shown that at least four days are required for the elimination of an intravenous injection of neosalvarsan. Most French clinicians administer injections seven or eight days apart.

If the first dose is well borne and there are no untoward symptoms, such as gastro-intestinal disturbances or headache, one could increase the next dose by 0.15 gm. This can be continued so that by the fourth injection the patient will be receiving 0.9 gm. Ravaut says that this figure should on no account be exceeded, but others, as Darier,[1] sometimes give 1.05 gm. One can also find those who mention larger doses, among them Leredde,[2] who, in cases of general paralysis and tabes dorsalis, has given a series of three injections of 0.9 gm., 1.2 gm. and 1.5 gm., respectively.

The solvent in most general use is distilled water. It must be freshly prepared and an apparatus composed entirely of glass is advised in order to avoid an impure product. Levy-Bing[3] advises the use of freshly dis-

1. Darier: Bull. Soc. franç. de dermat. et de syph., 1912, p. 383.
2. Leredde: Bull. Soc. franç. de dermat. et. de syph., 1912, p. 428.
3. Levy-Bing: Bull.-Soc. franç. de dermat. et. syph., 1912, p. 465.

tilled water, to each liter of which 1 c.c. of a normal solution of sodium carbonate has been added. In an exhaustive article, Emery[4] says that the apparatus employed for distillation should be made of Jena glass. Crystal, he says, is rich in lead silicate, ordinary white glass contains silicate of sodium, while potassium silicate is to be found in Bohemian glass. Jena glass is recommended as being free from these impurities.

As regards its administration, shall it be given in concentrated solution? It has been my good fortune to see and follow a large number of cases thus treated in Ravaut's service at Hôpital St. Louis as well as with Levy-Bing at Maison St. Lazare, and from the results obtained I have no hesitation in recommending it. Ravaut,[5] who was the first to give it in this form, administers neosalvarsan up to 0.9 gm. doses in 10 c.c. of freshly distilled water and says that this amount of water may be further reduced.

His technic is as follows: The required amount of distilled water is poured into a small glass container and the neosalvarsan added. As soon as solution has occurred the liquid is drawn up into the glass syringe, which is equipped with a special aspirator-filter. The latter is detached, the needle put on and introduced into the selected vein, and, as soon as its entrance is announced by the outpouring of blood into the syringe, the dose is given. The whole operation is easily accomplished in about one minute. At St. Lazare the desired amount of neosalvarsan is dissolved in 25 c.c. of distilled water.

The intravenous route is preferred and in the great majority of cases is the one selected, but the intramuscular method is also followed by some. Balzer[6] of Hôpital St. Louis has used it extensively as follows: Neosalvarsan 0.3 gm., suspended in 1 c.c. of oil, and the whole enclosed in a glass ampule, is the form in which the drug is furnished. The muscles of the lumbar region are best suited for injection by this method. The patient reclines face downward, a needle is inserted into the muscle on each side of and close to the spinal column, just above the iliac crest. The required dose is drawn up into the syringe, which is then attached to the needle, and the injection is made. One should not omit waiting at least one minute after the introduction of the needle before proceeding with the injection, for should bleeding occur the needle must be withdrawn and reinserted. This is done, of course, to obviate embolism, which would result should any of the oily mixture be injected directly into a blood-vessel. The gluteal region may be utilized and one-half the dose injected into each buttock in a similar manner. One such injection can be given every eight days, and six would constitute a series. Balzer has also employed, in a few cases, a mixture of neosalvarsan 0.3 gm., and gray oil 0.05 to 0.07 gm. in each dose. This was used after the manner in which the intramuscular injection already referred to was used. No bad results followed the employment of this mixture, nor was any decomposition of the neosalvarsan in the presence of the hydrargyrum noted.

SEQUELAE OF INTRAVENOUS INJECTION

The phenomena which follow an intravenous injection of neosalvarsan may be briefly summarized as follows:

1. *Elevation of Temperature.*—When present, it usually begins six or eight hours after the injection. It is more frequent after the first than those given subsequently. In a series of 191 injections Ravaut ascertained an elevation of temperature above 38 C. (100.4 F.) fifty-one times. The temperature usually drops to normal within twenty-four hours.

Certain syphilographers, among them Jeanselme, state that the fever which follows the initial injection of neosalvarsan is a specific one, due to the destruction of the spirochete, and further that it possesses the same significance as that which follows the injection of tuberculin in tuberculosis. This statement is strengthened by the fact that in a large number of skin diseases treated with intravenous injections of neosalvarsan, among them leprosy, sporotrichosis, mycosis fungoides, sarcoid and dermatitis herpetiformis, this rise in temperature was not detected.

Observations made by Brocq are of interest as showing that in different stages of syphilis the febrile reaction varies. Those treated with neosalvarsan during the period of the initial lesion showed a temperature of 37.5 C. (99.5 F.), 37.8 C. (100.04 F.) rarely 38 C. During the secondary stage slightly higher readings were recorded up to 38.5 C. (101.3 F.). The highest temperature reached was found in those suffering from the graver manifestations of syphilis. Among them an elevation to 40 C. (104 F.) was not uncommon.

2. *Headache.*—This is of frequent occurrence following the initial injection, in 45 per cent. of all cases, according to Milian. It usually appears a few hours after the injection, but its duration does not usually exceed twenty-four hours. Should the patient complain of headache following his first injection, one need not attach any particular significance to it. But if, on the other hand, it is noted after several, the physician should be on his guard and examine the nervous system of his patient at once. This can be done clinically or biologically. The latter method is more delicate and accurate. Spinal puncture having been performed, the fluid which has been withdrawn should be examined microscopically with regard to the presence of an increased number of lymphocytes and chemically for albumin, and it can be further tested by means of the Wassermann reaction. The degree of pressure under which the fluid issues should not be overlooked.

3. *Nausea and Vomiting.*—These, like fever and headache, appear most frequently after the first injection, but may come more quickly, sometimes almost immediately after the neosalvarsan has been given. In his series of injections which has been already mentioned, Ravaut noted nausea twenty-two times and vomiting ten times. He believes that these can in most cases be avoided by a preliminary course of mercurial injections.

4. *Diarrhea.*—A serous diarrhea has been observed, usually on the night following the injections. It is generally mild in character and only found after the initial treatment as a rule.

5. *Cutaneous Manifestations.*—Generalized scarlatiniform eruption, bullous eruptions, herpes zoster, urticaria, herpes simplex and morbilliform erythemata have been observed.

6. *Miscellaneous.*—Icterus with enlarged liver, neuritis plus the classical picture of arsenical paralysis, deafness and others too numerous to be considered, have been reported.

There is a noticeable tendency toward reducing the number of conditions in which the use of neosalvarsan

4. Emery: Bull. Soc. franç. de dermat. et de syph., 1912, p. 461.
5. Ravaut: Ann. de dermat. et de syph., April, 1913, p. 206.
6. Balzer: Presse méd., April 2, 1913; Bull. Soc. franç. de dermat. et de syph., 1913, p. 92.

is contra-indicated. The following are the chief contra-indications: In nephritis (some advise the use of neosalvarsan when the renal lesion is luetic), myocarditis, chronic alcoholism, acute inflammation of the lungs and upper air-passages and gastric or duodenal ulcer. As to tabes and general paralysis in advanced stages, it is the opinion that they should be treated with this agent even though one is forced to give a small dose. In the incipient stages of these two diseases large doses can be given.

With regard to the effect of neosalvarsan on the various lesions of lues most French syphiligraphers seem in accord with the conclusions of Brocq,[7] who, while believing it to be a most efficient preparation, does not hesitate to say that a prolonged and intensive mercurial treatment should follow each course of injections. He also believes that the combined action of mercury and arsenic is infinitely superior to the employment of either one alone. Neosalvarsan is admitted to be equally as efficient as salvarsan without several of its disadvantages.

SUMMARY

1. The initial dose of neosalvarsan in most cases should not exceed 0.45 gm.

2. At least seven days should elapse before a second injection is given.

3. If following several injections, signs of intolerance are noted, the dose should be kept at the same figure, and reduced if the symptoms do not disappear following further treatment.

4. Distilled water is the best solvent.

5. Administration in concentrated solution seems to be the superior method.

6. Distillation should be performed in an apparatus composed wholly of glass.

7. The intravenous method is the one of choice.

8. Continued headache should be regarded as indicating possible involvement of the nervous system.

9. Neosalvarsan has a most efficient ally in mercury.

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EFFECT OF LACTIC ACID BACILLI ON DIPHTHERIA

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Owing to the small number of beds available for the treatment of diphtheria in the Baltimore Municipal Hospital for Infectious Diseases, and to the increasing demand for institutional treatment of this disease, every suggestion for ridding the nose and throat of the Klebs-Löffler bacilli has been carefully considered by us and in most instances put to test.

The outcome of those tests gave no better results in our hands than our former routine, but we did not use the *Staphylococcus aureus* spray, described by Schiøtz,[1] as an overrider on account of its virulency. We perhaps were influenced more by the unfavorable reports than the favorable. Davis,[2] among others reported a case of severe tonsillitis following the use of this spray.

The routine of this hospital for the treatment of diphtheritic noses and throats consists of thorough irrigations of both parts with warm normal salt solution (by gravity) on admission, and frequent subsequent gargling or spraying with liquor sodii boratis compositus and liquor iodi carbolatus, and occasional swabbing with a 5 per cent. silver nitrate solution.

In addition to this routine, the suggestion of Wood[3] for the use of the live lactic acid bacillus spray for diphtheria as an overrider was done and gives promise of being a valuable addition.

We have employed this method in nine cases with results that are more pleasing than those from any other method at our disposal. These cases were not selected, but taken as they were admitted as bacteriologic and clinical diphtheria with the exception of Case 3, which was a bacteriologic case only. Our former treatment for the typical carriers differs somewhat from the routine mentioned above in that in these cases the tonsils are distended with sterile normal salt solution or with antitoxin by the injection of either directly into the tonsillar tissue, the surface of the tonsils then being swabbed with liquor iodi carbolatus. In Case 3 the live lactic bacilli were sprayed instead of using the antiseptic swabs.

We obtained cultures of the live lactic acid bacilli (Bulgarian type) from the Mulford laboratories in 20 c.c. tubes.

A small atomizer was used to distribute the culture in the nose and throat. This method was used in four cases. Ordinary sour milk was used in five cases in the form of a gargle for the throat and spray for the nose. It might be mentioned that no antiseptic gargles or sprays were used in these nine cases and we have treated some others, in which both were used with practically the same results as below.

LACTIC ACID

CASE 1.—Girl, aged 4. Onset Sept. 12, 1913, with a sore throat. Admitted to Sydenham Hospital, September 17. Received no treatment prior to admission. Examination of the throat revealed a thick grayish membrane on each tonsil. Culture positive to Klebs-Löffler bacilli. On admission 10,000 units antidiphtheritic serum given.

September 18: Throat sprayed with two tubes of pure culture of lactic acid bacillus.

September 19 and 20: Cultures taken on these days were positive. Throat sprayed as on the 18th.

September 21: Culture taken on this day was slightly positive (but two or three Klebs-Löffler bacilli could be seen).

September 22, 23 and 24: Cultures taken on these dates were negative.

Summary: A negative culture was obtained four days after treatment was started with pure cultures of lactic acid bacillus, and but five days had elapsed since the antidiphtheritic serum had been given.

CASE 2.—Girl, aged 2½. Onset Sept. 15, 1913. Admitted to Sydenham Hospital, Sept. 17, 1913. Examination on admission showed that each tonsil contained a small patch of membrane. Culture positive in Klebs-Löffler bacilli. Five thousand units antidiphtheritic serum given.

September 23: Culture positive.

September 24: Culture still positive. Throat sprayed with pure culture of lactic acid bacilli (Bulgarian type) at 2 p. m.

September 25: Culture slightly positive. Throat sprayed as on the 24th, at 11 a. m.

September 26 and 27: Culture negative to *B. diphtheriae*.

7. Brocq: Bull. Soc. franç. de dermat. et de syph., 1912, p. 377; Presse méd., July 26, 1913.

1. Schiøtz, A.: Cure of Chronic Diphtheria Bacillus Carriers, Ugesk. f. Læger, Dec. 9, 1909, abstr., THE JOURNAL A. M. A., Jan. 29, 1910, p. 422.

2. Davis, Clara M.: Tonsillitis Following the Use of the Staphylococcus Spray, THE JOURNAL A. M. A., Aug. 9, 1913, p. 393.

3. Wood, Harold B.: Lactic Acid Bacillus Spray for Diphtheria, THE JOURNAL A. M. A., Aug. 9, 1913, p. 392.

CASE 3.—Girl, aged 14. Admitted to the Sydenham Hospital Oct. 6, 1913. Culture, examined by the city health department on account of diphtheria being in the family, was found positive Oct. 5, 1913. Examination reveals the absence of membrane on the tonsils, but they are enlarged and injected. Five thousand units antidiphtheritic serum given.

October 7: Throat sprayed with lactic acid bacilli (pure culture of the Bulgarian type).

October 8: Culture positive to *B. diphtheriae*.

October 9 and 10: Cultures negative.

CASE 4.—Girl, aged 8. Admitted to Sydenham Hospital on October 15, twenty-four hours after the onset. Each tonsil contained a small patch of whitish membrane. Culture taken on this date was positive to Klebs-Löffler bacilli. Five thousand units antidiphtheritic serum given.

October 16: Culture taken at 11:30 a. m. positive. Throat sprayed with pure culture lactic acid bacilli (Bulgarian type) at 12 m.

October 17: Culture taken at 4 p. m. negative. Throat sprayed, as on previous day, at 4:30.

October 18, 19 and 20: Cultures taken at 11 a. m. each day negative.

SOUR MILK

CASE 5.—Woman, aged 25. Admitted to Sydenham Hospital Nov. 9, 1913, the date of the onset. Examination reveals a whitish, ragged membrane extending over the surface of both tonsils and posterior pharynx. Ten thousand units antitoxin given. Culture positive to *B. diphtheriae*.

November 11: Membrane beginning to disintegrate but tonsils still very edematous. Five thousand units antidiphtheritic serum given.

November 17: Culture taken at 2 p. m. positive. Sour milk used as gargle from this time (2 p. m.) until midnight, every three hours.

November 18, 19 and 20: Cultures each day negative. Sour milk used as gargle every two hours from noon until midnight on the 18th and 19th.

CASE 6.—Girl, aged 18. Onset November 9, with sore throat and malaise. Examination shows on both tonsils a whitish membrane on a red edematous base. The posterior pharynx is greatly injected and swollen.

November 11: Admitted to Sydenham Hospital and 5,000 units of antidiphtheritic serum given. Five thousand units of antitoxin given the day previous to admission (Nov. 10, 1913).

November 15: Membrane has disappeared.

November 17: Culture taken at 2 p. m. positive to *B. diphtheriae*. Sour milk used as gargle from 2 p. m. until midnight, every two hours.

November 19 and 20: Cultures taken at 11 a. m. each day negative to *B. diphtheriae*. Sour milk used as gargle every two hours from noon until midnight.

November 22: Edema has completely disappeared and with the exception of a slight enlargement of the tonsils, throat has a normal appearance.

CASE 7.—Girl, aged 14. Admitted to Sydenham Hospital Nov. 10, 1913. Onset November 2, with cold in the head. Examination shows breathing labored, lips and mucous membranes are cyanotic, continuous bleeding from nose and dried blood on face around nose. There is a retraction of interspaces and patient cannot speak above a whisper. There was a small patch of grayish membrane on each tonsil.

November 10: Fifteen thousand units antidiphtheritic serum given. Culture positive to *B. diphtheriae*.

November 15: Culture positive.

November 17: Culture positive. Sour milk used as gargle every three hours from noon until midnight.

November 18 and 19: Culture taken at 11 a. m. negative. Sour milk used as gargle every two hours from noon until midnight.

November 21: Culture negative.

CASE 8.—Girl, aged 8. Onset Nov. 18, 1913, with sore throat. Culture taken November 19 and examined by health department positive to *B. diphtheriae*.

November 20: Patient admitted to Sydenham Hospital at 1 p. m. Culture taken on admission positive. Throat gargled every two hours with sour milk from taking of culture until midnight. Examination showed both tonsils completely covered with a thick grayish membrane.

November 21: Culture positive. Sour milk used as gargle from noon until midnight. Membrane not so thick and beginning to disintegrate.

November 22: Culture taken at 11 a. m. positive. Membrane almost gone, but a small patch present on left tonsil.

November 23: Membrane entirely gone. Culture taken at 11 a. m. positive. Sour milk used as gargle from noon until midnight every two hours.

November 24, 25 and 26: Cultures negative. Sour milk used as gargle from noon until midnight.

CASE 9.—Girl, aged 6. Onset Nov. 25, 1913, with sore throat. Admitted to Sydenham Hospital Nov. 26, 1913. Examination showed tonsils enlarged, hyperemic and edematous; a patch of thick grayish membrane on left tonsil.

November 26: Five thousand units of antidiphtheritic serum given at 12:15 p. m. Culture taken at this time positive. Sour milk used as a gargle from noon until midnight.

November 27, 28 and 29: Cultures positive. Sour milk gargle used from noon until midnight.

November 30 and December 1: Cultures negative.

SUMMARY

The results of the use of the lactic acid bacillus and sour milk in these few cases are encouraging enough for us to make a further study in this direction.

With the use of it and the intravenous method of administering antitoxin which will be published in a later paper, the patients are kept in the hospital a shorter period of time than formerly.

Before a definite conclusion can be reached in regard to the effect that these organisms have on the Klebs-Löffler bacilli and the cause of the antagonism between the organisms, however, a large series of cases must be studied—a series that extends over a long period of time in which comparisons can be made with the former methods of treatment.

Our part in this is simply a partial appliance of a method recommended by another.

Sydenham Hospital.

THE PRECIPITATION OF COLLOIDAL GOLD

A SPECIFIC REACTION IN THE SPINAL FLUID

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The discovery of the principle of complement deviation, and its application to syphilis by Wassermann, introduced a new era in medicine. Deviation for diseases other than syphilis have been elaborated with varying success, and attempts have been made by some to simplify and by others to render more delicate the original method suggested by the discoverer of the reaction. The significance of the entire test was for a time under discussion, but thanks to laboratory workers the importance of the Wassermann reaction has received a definite status and has been so well studied that, in conjunction with the analysis of the cerebrospinal fluid, it occupies a position second to none in the neurologic laboratory to-day.

A series of tests have been introduced for rendering assistance especially in neurologic cases, and it seems that the endeavors along this line are by no means exhausted. Most of these experiments have utilized the cerebrospinal fluid, and it is concerning one of the more recent of these tests that we wish to draw attention and report our findings. This test is called the goldsol or gold chlorid precipitation test, and was first worked out by Carl Lange.

Lange[1] says that in order to ascertain the exact nature of the globulin in the cerebrospinal fluid he has made use of the most delicate known method in the field of protein analysis, namely, the determination of the gold number (*Goldzahl*) according to the method worked out by Zsigmondy. In Lange's article it is apparent that the sole purpose of the investigation was to determine the chemical nature of the substance in the cerebrospinal fluid commonly spoken of as globulin, and obtained *in vitro* by Nonne's half saturation with ammonium sulphate solution and known as "Phase 1" reaction. This substance has been subjected to the large number of reactions usually employed in the analysis of proteins, as well as to the determination of the gold number. The results obtained with the latter method, with fluids from patients with syphilitic diseases of the nervous system, suggested to Lange the possibility of using it as a specific test for syphilis of the nervous system. At any rate the conclusion at the end of his paper neglects to tell us the nature of the protein substance, the point which he set out to establish.

The technic, according to Lange, depends chiefly on the proper preparation of the reagent. He describes a color-scale to correspond with varying degrees of gold precipitation; this scale reads from a clear watery white, which is obtained with complete precipitation, through the partial precipitations giving, respectively, white-blue, light blue, dark blue, violet, blue-red and red-blue, to the original red of the indicator. Besides these color changes, Lange considers as important the dilution in which the precipitation takes place. In his experiments the dilutions varied from 1 : 10 to 1 : 40,000.

In expressing his results graphically, Lange places the abscissa line at the top; in our work we have followed the usual custom and placed the abscissa at the bottom.

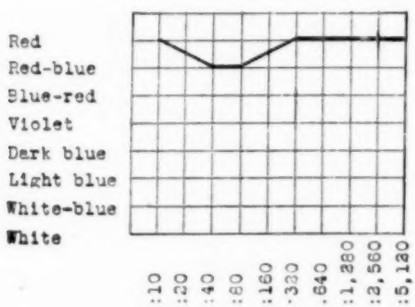

Chart 1.—Curve obtained in a case of secondary syphilis with headaches (reproduced from Lange).

For the sake of comparison we reproduce one of Lange's curves (Chart 1), which was obtained in a case of secondary syphilis with headaches. In Lange's article this is the only curve given with explanatory data; the other curves are without numbers and without color-scale, thus rendering difficult the correct interpretation.

1. Lange, Carl: Ztschr. f. Chemotherap., 1912, 1, Part 1.

The article concludes with several tables giving the result of the gold precipitation expressed in a number of pluses, the complete precipitation being recorded as five pluses.

The cerebrospinal fluids from twenty non-syphilitic patients were analyzed and gave negative results. The fluids from cases of paresis were recorded with a number of pluses varying from three to five. Fluids from cases of secondary syphilis with headaches also showed five pluses.

The entire work of Lange included less than a hundred cases. A few excellent color-plates accompany his communication. His conclusion is that the reaction is significant of syphilis of the nervous system, and he suggests that patients with syphilis should have this test performed in addition to those usually employed. He says that it is particularly to be recommended in cases in which only a small amount of spinal fluid is available, and that it is also very useful in those cases in which syphilis is suspected and yet there are no clinical evidences of the disease.

A few American workers have repeated Lange's work and have verified his conclusions. Grulee and Moody also assert that they have found the test of value in diagnosticating cases of congenital lues without neurologic manifestations.

Our results do not entirely coincide with those of Lange and his followers in America. In general, we have found that this test is not a specific one for syphilitic disease of the nervous system, but when all the curves are compared, it is found that a characteristic reaction obtains in practically all cases of general paresis and in most of the cases of taboparesis. The fact that in taboparesis the curve is almost identical with that of general paresis is very interesting from both the laboratory and clinical points of view. The persistence of the characteristic curve in well-treated cases of general paresis reminds one of the "Wassermann-fast" condition in the serum which is present in these cases, and may prove to be a valuable laboratory help in differentiating general paresis from cerebrospinal lues and other pathologic states simulating paresis.

Before presenting our results it is advisable to describe briefly the technic, emphasizing certain salient points for properly carrying out this test.

TECHNIC EMPLOYED

The following stock solutions are used:

10 per cent. sodium chlorid solution, made from Merck's C. P. crystals.
1 per cent. gold chlorid solution, made from Merck's C. P. crystals.
2 per cent. potassium carbonate solution.
0.75 per cent. formaldehyd solution.

From the 10 per cent. sodium chlorid solution a 0.4 per cent. solution is to be freshly prepared for each day's tests.

PREPARATION OF THE COLLOIDAL GOLD

The proper preparation of this reagent is the most important as well as the most difficult part of the technic.

We have been in the habit of making up 500 c.c. at a time as follows: In a liter Florence flask of Jena glass (Lange recommends a beaker) which has been thoroughly cleansed with strong hydrochloric acid, water, distilled water and double-distilled water, are poured 500 c.c. of fresh double-distilled water. It is important to note that no rubber stopper or rubber connection should come in contact with the steam or with the distilled water.

Five c.c. of the potassium carbonate solution are added and the flask placed over the flame for one minute and 5 c.c. of 1 per cent. gold chlorid solution added. The heating is

continued until the first bubbles appear; the flame is turned off and 5 c.c. of the formaldehyd solution allowed to run in gradually. During the addition of the formaldehyd the flask must be constantly shaken until the solution changes to a deep port-wine color. This is the colloidal gold solution, and it should be absolutely transparent, and when viewed by reflected light should permit the reading of ordinary newspaper print. It should not show a brown shimmer or a bluish color, nor should there be a bluish precipitate or any discoloration on the sides of the flask. It is safer to discard solutions that do not answer these requirements, as errors and false curves are liable to result from their use.

As a standard of color comparison we make use of 10 c.c. of a tenth-normal sodium hydroxid solution plus 1 c.c. of a Congo-red solution and 0.5 c.c. of an alcoholic alizarin solution. This gives a color matching exactly the correct color of the properly prepared colloidal gold. The comparison is to be made by transmitted light.

PERFORMANCE OF THE TEST

Into the first of a series of ten test-tubes are placed 1.8 c.c. of the 0.4 per cent. freshly prepared sodium chlorid solution, and into each of the others 1 c.c. To the first test-tube is now added 0.2 c.c. of the spinal fluid to be tested, measured accurately. This is thoroughly mixed by shaking and drawing up a 1-c.c. pipet several times. This gives a dilution of 1:10. One c.c. is now transferred from the first to the second tube and thoroughly mixed as directed before. This gives a dilution of the spinal fluid of 1:20 in the second tube; 1 c.c. of the solution in the second tube is transferred to the third test-tube, in which the dilution becomes 1:40 and so on through the series, giving a final dilution of one in 5,120 in the tenth test-tube.

Five c.c. of the gold chlorid solution are now added to each of the tubes and thoroughly shaken to insure perfect mixing of the fluid and reagent. If the reaction is going to be positive, a change in color of the indicator from red to a bluish hue takes place in a few minutes, but the final reading should be made only after from twelve to twenty-four hours. It has been our practice to allow all tests to stand over night. The total precipitation of the gold causes a complete disappearance of the red color of the indicator, giving a watery clear solution. Following the custom of other writers, we represent this complete precipitation as No. 5 on the ordinates (all results are best expressed in graphic curves on cross-section paper), a light blue almost clear fluid is designated as No. 4, and the next change is a deeper blue, which is No. 3; a reddish blue is No. 2, a slightly changed red is No. 1, and no change whatsoever is zero. Nicer color distinctions can be interpolated, but the foregoing scale is sufficient as a satisfactory working basis.

PRECAUTIONS

1. The spinal fluid should be clear, fresh and free from red blood-cells or other contaminations.

2. The lumbar-puncture needle should contain no rust, and should be cleansed with alcohol and ether before being sterilized.

3. There must be thorough and proper mixing both before and after the addition of the indicator to insure accurate dilutions.

4. All test-tubes should be thoroughly cleansed and sterilized. Pseudoreactions will result through omission of this detail.

5. All pipets should be treated in a similar manner.

6. For each fluid use a fresh pipet.

MATERIAL

For the sake of economizing space we print one curve (Chart 2) in full and give a few figures from which remaining curves can be reconstructed; for example, the color-changes given by Mr. Kin., expressed numerically for the various dilutions, were 5 5 5 5 5 4 3 2 0 0, the curve for which is shown in Figure 2.

In reproducing the curves the majority will have no numbers to indicate the dilutions; it will be taken for granted that the first number represents the first tube or the 1 : 10 dilution, and the tenth number represents the change in the tenth tube, or 1 : 5,120. With this explanation it will be very easy to reconstruct the curve.

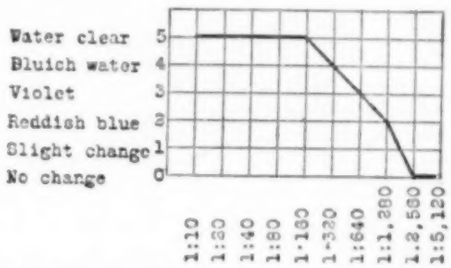

Chart 2.—Construction of curve for color-changes expressed by the numerals 5 5 5 5 5 4 3 2 0 0.

The fluids analyzed by us were chiefly from patients with organic disease of the nervous system; a few were from functional cases and an even smaller number were from cases commonly classified as medical cases. We have analyzed to date approximately 250 spinal fluids and have subdivided our results into two classes, A, non-lues, and B, syphilitic disease of the nervous system. Class B is subdivided into (1) cerebrospinal syphilis, (2) tabes, (3) taboparesis, and (4) general paresis.

TABLE 1.—CLASS A. NON-LUES

Name	Diagnosis	Serolog.* S.W.	F.W.	Gl.	Pl.	Remarks	Gold Curve
Hof.	Spast. parapl.	—	—	—	0	Post meningitic	1 0 0 0 0 0 0 0 0 0
Men.	Mult. scler.	—	—	—	0	.....	1 2 2 2 2 0 0 0 0 0
Sch.	Mult. scler.	—	—	—	0	.....	5 5 5 4 2 1 0 0 0 0

Summary: 28 analyses; negative, 27; positive, 1 (no reaction considered positive unless it shows 3 or greater precipitations).

* In this and the accompanying table, the following abbreviations are used: S. W., serum Wassermann; F. W., cerebrospinal fluid Wassermann; Gl., globulin, and Pl, pleocytosis. In the last column the precipitation of colloidal gold is given.

TABLE 2.—CLASS B. LUETIC DISEASES OF THE NERVOUS SYSTEM

(1) Cerebrospinal Lues

Name	Treatment	Serology S.W.	F.W.	Gl.	Pl.	Remarks	Gold Curve
Haw.	Many salvarsan and Hg. inunct.	—	—	+	42	.....	0 0 0 0 0 0 0 0 0 0 0 0
Hul.	.....	+	+	+	106	Erb's spast. paralysis	4 4 4 0 0 0 0 0 0 0 0 0
Gei.	Salvarsan and neosalvarsan	..	+	+	127	.....	3 3 2 2 1 1 1 1 1 1 1

Summary: 28 analyses; negative, 13; positive, 15.

(2) Tabes

Name	Treatment	Serology S.W.	F.W.	Gl.	Pl.	Remarks	Gold Curve
Mat.	Salvarsan	.....				.....	0 0 0 0 0 0 0 0 0 0
Jay.	.....	+	—	—	127	Exudative type	0 0 0 0 0 0 0 0 0 0
Ref.	.....	+	+	—	18	.....	3 4 4 3 2 2 0 0 0 0

Summary: 36 analyses; negative, 28; positive, 8.

(3) Taboparesis

Name	Treatment	Serology S.W.	F.W.	Gl.	Pl.	Remarks	Gold Curve
Cat.	Neosalvarsan	+	+	+	20	.....	5 5 5 3 2 0 0 0 0 0
Man.	.....	+	+	+	170	.....	5 5 4 3 2 0 0 0 0 0
Ber.	.....	+	+	+	5	.....	4 4 4 4 3 3 1 0 0 0

Summary: Characteristic G. P. curve obtained in 5 cases; 10 analyses; negative, 2; positive, 8.

(4) General paresis

Name	Treatment	Serology S.W.	F.W.	Gl.	Pl.	Remarks	Gold Curve
Roo.	.....	+	+	+	16	.....	4 4 4 3 3 3 2 0 0 0
Kat.	.....	+	+	+	46	.....	5 5 5 4 2 2 1 1 0 0
Has.	.....	+	+	+	70	.....	5 5 1 0 0 0 0 0 0 0

Summary: Characteristic curve in 19 cases; 21 analyses; negative, 0; positive, 21.

When more than one test has been performed on the same patient, the subsequent tests were made only after intervals during which specific treatment had been given. These details are noted in the tables. The tables also contain the usual laboratory data.

All cases in which the diagnosis could not be definitely established were omitted from the tables.

In Table 1, a case diagnosticated as spinal cord tumor, did not give the excess of globulin which is usually found in these cases; but the diagnosis was confirmed at the operation. Case 16 gave a curve similar to those obtained in typical cases of general paralysis; but the clinical diagnosis of multiple sclerosis was clearly the correct one.

CONCLUSIONS

1. We have been unable to corroborate fully the results obtained by the other workers who have asserted that this reaction can be obtained in all cases of syphilitic disease of the nervous system.

2. The most marked reactions and typical curves are obtained only in cases of general paralysis and taboparesis.

3. A positive reaction occurs in most cases of cerebrospinal syphilis, but the curve is not characteristic.

4. In the majority of the cases of tabes either no reaction occurs or only a weak reaction in the 1 : 10, 1 : 20 or 1 : 40 tube.

AN IMPROVED TECHNIC FOR THE DOREMUS-HINDS UREOMETER

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It is a matter of common knowledge that the estimation of urea by the Doremus-Hinds ureometer involves some error. Nevertheless, this method continues to be almost universally employed by clinicians in routine analysis, doubtless because the more accurate methods[1] seem rather formidable for the average laboratory facilities and often the limited time of the clinical analyst. Hence a simple way of minimizing the error in this very convenient method may be of some value.

According to our observations, the greater part of the error commonly encountered in this determination is due to a fault in the technic of the method. This fault is traceable to the text-books on urinalysis, chemical diagnosis, etc. The directions usually given for carrying out the test specify that after the urine has been introduced into the hypobromite solution, the instrument should be allowed to stand "for a short time," or "from ten to twenty minutes" before the reading is taken. Doubtless every one who has used the method has noticed that minute bubbles of gas continue to rise for a much longer time than that specified. Table 1 shows that this evolution of minute bubbles, extending over a long time, should not be neglected.

It is at once apparent that the readings taken at twenty minutes, according to the text-book directions, are so far below the true figure for urea as to be absolutely worthless. It is equally apparent that there is no regularity in the relation of this first reading to the true value, the first reading sometimes being less than 45 per cent. of the correct figure, sometimes being as much as 95 per cent. of the correct. Such a high reading, however, occurred very seldom. The temperature had little or no part in this, for the laboratory temperature never varied more than 4 or 5 degrees C. while the experiments were being carried out, and the method worked just the same in a warm room as in a cold one.

Consideration of the results of a large number of analyses of pure urea solution and urines showed no definite relation between the time of reading and the relative completeness of the reaction, when the ureometer was allowed to stand quietly. In the samples of urine, the urea was determined by the phosphoric acid method of Folin and Pettibone.[2] Assuming that the latter method gives correct results, we found that the correct figure was reached with the ureometer in periods of time varying from 5 to 24 hours, the periods in one set of readings chosen at random being 16, 5, 19, 19, 24 and 22 hours.

Finally it was seen that the explanation of these inconsistently variable results must lie in the amount of diffusion which takes place between the urea solution or urine, and the hypobromite solution at the moment of introduction of the former into the latter, and also the rate of intermingling thereafter. The density of the former being much lower than that of the hypobromite, it rises to the top of the column of liquid even when introduced slowly, before all of the urea has come in contact with hypobromite, and subsequent diffusion takes place only very slowly if the instrument is allowed to stand quietly. Experiment showed at once that agitation after the introduction of the urea solution gave very rapid reaction.

Agitation was brought about either by gently but rapidly shaking the instrument after the first vigorous reaction was over, or by inserting a coiled copper wire into the hypobromite tube to act as stirrer. With the

TABLE 1.—READINGS TAKEN AT INTERVALS WITH SIX DIFFERENT UREOMETERS (DOREMUS-HINDS)*

	20 min.	30 min.	1 hr.	2 hr.	3 hr.	15 hr.	24 hr.	Actual Amount, mg.
1.	6.4	7.0	8.4	10.0	11.0	13.5	14.5	15
2.	8.8	9.8	11.3	12.2	12.5	13.4	14.0	15
3.	8.0	8.5	9.8	10.6	11.2	12.8	13.6	15
4.	11.0	11.5	12.6	13.2	14.7	14.8	15.3	15
5.	7.1	7.7	8.5	9.3	10.3	13.2	14.0	15
6.	10.6	11.0	12.2	13.0	13.2	14.0	14.3	15
Average..	8.7	9.3	10.8	11.4	12.2	13.8	14.3	15

	20 min.	30 min.	1 hr.	2 hr.	3 hr.	5 hr.	24 hr.	Actual Amount, mg.
1.	13.3	13.5	14.0	14.1	14.3	14.3	14.4	15
2.	13.0	13.8	15.5	15.7	15.8	15.8	15.8	15
3.	13.0	13.5	14.5	14.7	15.0	15.0	15.1	15
4.	13.8	14.4	15.1	15.4	15.5	15.5	15.5	15
5.	13.0	13.4	14.0	14.1	14.1	14.1	14.6	15
6.	14.5	14.8	14.9	15.3	15.4	15.4	15.5	15
Average..	13.4	13.9	14.7	14.9	15.0	15.0	15.1	15

These two sets of readings are selected at random from a large number of similar sets.

* Pure urea solution was used containing 15 mg. per cubic centimeter. Figures express milligrams per cubic centimeter.

TABLE 2.—UREA DETERMINATIONS WITH AGITATION OF UREOMETER, USING PURE UREA SOLUTION

	Reading	Actual Amt., mg.
1.	14.8	15
2.	15.5	15
3.	15.0	15
4.	14.6	15
5.	15.0	15
6.	15.7	15

Readings taken in five minutes. Figures express milligrams of urea per cubic centimeter of solution.

Several consecutive determinations made with the same ureometer, No. 3 above, gave the following results: 15.1, 15.1, 15.2, 15.1, 15.0.

1. Folin: Ztschr. f. physiol. Chem., 1901, xxxii, 504; 1902, xxxvi, 333, and 1903, xxxvii, 548. Hawk: Practical Physiological Chemistry, p. 394. Folin and Pettibone: Jour. Biol. Chem., 1912, xi, 507. Marshall: Jour. Biol. Chem., 1913, xiv, 283.

2. Jour. Biol. Chem., 1913, xiv, 283.

ordinary shape of the ureometer, the latter method is awkward, and the shaking is preferable. The rate of reaction appears to be roughly proportional to the rate of vibration attained in the shaking. It was found that after five minutes of rapid shaking (from 250 to 300 vibrations per minute), a reading could be taken which did not increase more than 0.2 or 0.3 mg. per cubic centimeter in twenty-four hours. Furthermore, this reading was approximately correct for urea solution, as shown in Table 2.

It would seem, therefore, that any one instrument gives fairly constant results with this technic, which was certainly not true when the instrument was left standing quietly. It would seem also that the largest factor in the deviation from the true value with pure urea solutions is the imperfection in the graduation of the instruments, which suggests that a correction table could be made for each ureometer, which would add greatly to the accuracy of the determinations. Our uncorrected instruments gave readings ranging from 97 to 105 per cent. of the correct value.

TABLE 3.—COMPARATIVE RESULTS OF THE DETERMINATION OF UREA BY THE DOREMUS-HINDS UREOMETER, AND BY FOLIN AND PETTIBONE'S PHOSPHORIC ACID METHOD

No. of Sample	Doremus-Hinds Ureometer	Method of Folin and Pettibone	Factor for Correction of 1	1 Corrected by Average Factor 0.917
1.	19.0	17.20	0.9053	17.42=101.3%
2.	15.9	13.91	0.8748	14.58=104.8%
3.	12.1	10.83	0.8950	11.09=102.4%
4.	11.5	10.69	0.9296	10.54= 98.7%
5.	9.7	8.67	0.8938	8.96=102.6%
6	14.1	13.09	0.9284	12.93= 98.8%
7.	19.9	18.60	0.9346	18.25= 98.1%
8.	22.6	21.60	0.9556	20.72= 96.0%
9.	28.6	26.30	0.9196	26.29= 99.9%
10.	24.6	22.25	0.9037	22.56=101.5%
11.	4.1	3.66	0.8927	3.76=102.7%
12.	14.0	13.43	0.9593	12.84= 95.6%
13.	10.7	9.74	0.9103	9.81=100.7%
14.	7.3	6.74	0.9233	6.69= 99.3%
15.	11.9	10.79	0.9067	10.91=101.1%
16.	15.7	14.47	0.9217	14.40= 99.5%
17.	2.8	2.50	0.8928	2.57=102.7%
18.	9.1	8.82	0.9692	8.35= 94.6%
19.	17.4	16.28	0.9356	15.96= 98.0%
20.	15.8	14.29	0.9044	14.50=101.4%
21.	16.0	15.02	0.9387	14.67= 97.7%
22.	17.0	15.88	0.9341	15.59= 98.2%
23.	14.9	14.10	0.9463	13.66= 96.9%
24.	21.6	20.18	0.9343	19.81= 98.2%
25.	12.9	12.33	0.9558	11.83= 95.9%
26.	16.7	14.96	0.8958	15.31=102.6%
27.	24.8	22.72	0.9161	22.74=100.1%
28.	24.9	24.30	0.9759	22.83= 94.0%
29.	6.0	5.28	0.8800	5.50=104.2%
30.	17.4	16.20	0.9310	15.96= 98.5%
31.	24.0	22.32	0.9300	22.01= 98.6%
32.	14.0	13.23	0.9450	12.84= 97.0%
33.	20.0	18.64	0.9320	18.34= 98.4%
34.	9.3	8.08	0.8688	8.53=105.5%
35.	5.1	4.16	0.8157	4.68=112.4%
36.	11.9	11.28	0.9479	10.91= 96.7%
37.	7.0	5.93	0.8471	6.42=108.2%
38.	16.0	14.39	0.8994	14.67=102.0%
39.	20.6	18.60	0.9029	18.89=101.5%
40.	18.5	17.28	0.9340	16.96= 98.2%

Expressed in milligrams urea per cubic centimeter.
Average factor 0.9172.

Even with pure urea solutions, it was found that if agitation of the ureometer was delayed for some time after the solution had been introduced into the hypobromite, too low results were obtained, the deviation increasing with the length of the delay. It has long been known that urea in the presence of alkali is slowly changed to cyanate, which does not decompose with hypobromite, and this doubtless explains why, when the instruments are left standing, the readings often do not reach so high a figure as with the immediate shaking.

When application of this technic was made to urine, it was found that constant results could be obtained with any one instrument, that different instruments varied slightly, as was to be expected, but that the results were invariably higher than those obtained with the accurate method of Folin and Pettibone. It has been shown repeatedly that other nitrogenous constituents of urine besides urea, especially creatinin, uric acid and guanin, are decomposed by hypobromite, with the evolution of nitrogen, and that the hypobromite itself yields slight amounts of oxygen, which facts account for the high readings. Some of these results are shown in Table 3.

Column 3 of Table 3 shows the factor by which the result shown in Column 1 must be multiplied in each case to obtain the correct value for urea, shown in Column 2. The average of these factors in the forty determinations is 0.9172. It is proposed, therefore, that the figures obtained by the use of the ureometer, the instrument having been shaken as previously mentioned, should be multiplied by this average factor as a correction. The result of this correction applied to the forty determinations is shown in Column 4, with a comparison, expressed in percentage, of this corrected value with the true value. It is seen that all but four of the forty determinations, or 90 per cent. of them, fall within 5 per cent. of the correct figure, while all but twelve, or 70 per cent. of them, fall within 3 per cent. of the correct figure.

It is interesting to note that Ekecrantz and Erikson[3] suggest that in the determination of urea by decomposition (with nitrous acid?), with subsequent measurement of the nitrogen, the results, which were found to be high, should be multiplied by the factor 0.926, obtained by averaging the error in a large number of determinations.

One of us (Robinson) has observed over five hundred urinalyses in which the total nitrogen was determined accurately by the Kjeldahl method, and the urea more or less approximately by the Doremus-Hinds ureometer. By these determinations, the urea nitrogen averaged only about 70 per cent. of the total, whereas careful analyses have shown that the urea nitrogen averages actually about 87 per cent. of the total in normal urines. This indicates that the ureometer as ordinarily used, gives results which average only 80 per cent. of the correct values, and at the same time they vary with extreme inconsistency. It is apparent, then, that the results we have obtained show a vast improvement over the usual way of performing the urea determination, and if similar results can be constantly obtained by further experience with the technic herein employed, the method may yet be rescued from the mire of disrepute into which it has fallen, and take its place as a really approximate "approximate method" in clinical analysis.

To recapitulate, it is definitely shown that the Doremus-Hinds hypobromite method for the determination of urea in urine gives inconsistent and completely unreliable results when performed in the usual way described in the text-books, but when the ureometer is gently but rapidly shaken, either by hand or by machine, at the rate of from 200 to 300 vibrations per minute, the reaction is practically completed in five minutes, and constant results are obtained with any one instrument, there being slight variations in the graduations of different instruments. These results are higher than the correct value for urea, but when multiplied by the factor 0.917, the product represents approximately the true value for urea, being within 5 per cent. of correct in 90 per cent. of the analyses made.

It should be said that all experiments thus far made have been with normal urines. In a series of examina-

3. Ekecrantz and Erikson: Chem. Abs., 1912, vi, 3103.

tions of pathologic urines now in progress in this laboratory, check determinations are being made of urea by the Folin-Pettibone phosphoric acid method, and the Doremus-Hinds hypobromite method, using the modified technic described above.

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AN ETIOLOGIC STUDY OF HODGKIN'S DISEASE

SECOND NOTE *

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In a preliminary note recently published,[1] we reported that by repeated injection of the diphtheroid organism cultivated by us from cases of Hodgkin's disease, there had been produced in monkeys lesions of the lymph-nodes showing all the essential features of early Hodgkin's disease in man. Up to that time we had been unable to demonstrate that the organism could survive in the monkey for any great length of time, and therefore we felt that we could not assert that we had produced Hodgkin's disease in the monkey, or that we had even demonstrated any great pathogenicity of the diphtheroid organism for that species.

Since making that report, however, the course of our experimental work has demonstrated fully the pathogenicity of the culture we were using, and has further shown that the virulence of the organism to the monkey may easily be increased even to the point of producing death of the animal after a relatively acute illness. While the histologic picture of the enlarged lymph-nodes of the monkey taken three months after the successful inoculation, leaves no question as to the relation of the lesion to that of human Hodgkin's disease of the same duration, the great difficulty seems to be to secure infection and at the same time to avoid so great virulence as to produce extensive necrosis and softening and even suppuration. The working space between these two limits seems very narrow.

Extensive necrosis and leukocytic infiltration of the glands may seem foreign to the usual chronic picture of the lymph-nodes in Hodgkin's disease, yet a recent clinical case has demonstrated that even in man the virulence of the organism may be such as to lead to these features. With an apparent duration of six months, there is in this case marked involvement of cervical, axillary and mediastinal glands, febrile reaction and leukocytosis (44,000). While the excised glands show all the elements of well-developed Hodgkin's disease, there are, in addition, extensive areas of necrosis, softening and leukocytic infiltration. Yet culturally, the diphtheroid organism, which was obtained from both cervical and axillary glands, was the only organism to grow.

At present, our results indicate that the survival of an animal for the requisite length of time is all that is needed for a demonstration of the chronic lymph-node picture seen in the well-developed case of Hodgkin's disease.

Thus, since our experiments demonstrate that the diphtheroid organism is pathogenic for the monkey, that it produces a progressive enlargement of the lymph-nodes, with lesions similar to those of Hodgkin's disease in man, and further that the blood-changes in the monkey are similar to those in man, we feel fully assured of the etiologic relationship of the diphtheroid organism (*Bacterium hodgkini*) to Hodgkin's disease.

The experiments which have led to this conclusion are in outline as follows:

MONKEY 1 (covered by previous note).—Repeated injections with diphtheroid organism between April 19 and June 30, 1913, with production of a chronic lymphadenitis, characteristic of early Hodgkin's disease. July 6, excision of glands for histologic study. Implantation of portion of gland into right axilla of Monkey A3.

Death of Monkey 1 from intussusception occurred before infection was secured.

MONKEY A3.—Female rhesus.

July 6, 1913, lymph-nodes all small, shot-like. Under ether, tissue from Monkey 1, made up of parts of three lymph-nodes, introduced into axillary space. Fascia and skin closed by separate sutures.

July 9, skin wound slightly pulled apart, but clean. Fascial sutures holding well.

July 19, wound cleanly healed. A group of enlarged glands palpable in right axilla.

August 4, three enlarged glands still palpable in right axilla.

September 24, animal found dead, having died during night after gradual decline.

Post-mortem examination showed in right axilla a group of enlarged lymph-nodes, from 10 to 15 mm. in diameter, with softened areas from which, on incision, a thick puriform necrotic material was expressed. Extending upward from these nodes was a suppurative process reaching to the highest point in the axilla and involving the chest wall. The organs showed multiple metastatic abscesses in lung, heart, liver and pancreas. A hyperemic splenic tumor and cloudy swelling of the viscera were present.

Histologically, while the areas of necrosis and leukocytic infiltration were the most prominent feature of the picture in the adjacent parts of the nodes, there were all the elements of the Hodgkin's picture: distortion and disappearance of architecture; great proliferation of endothelioid cells, with marked development of endothelioid giant-cells, in some places with lobed nuclei, and proliferation of fibroblasts with both fine and patchy sclerosis. Eosinophil cells were found only occasionally (apparently due to exhaustion of the marrow as indicated by marrow sections).

The spleen showed a hyperemic tumor, pulp and sinuses being filled with red blood-cells. In addition the malpighian corpuscles showed a lesion distinct from the usual hyperplasia which results in a sharp outlining of the germinal center and a thick collar of lymphocytes. In this spleen, however, there was irregular and extensive proliferation of the endothelioid cells, with numerous mitotic figures present. Many of the cells were of the size and character of the endothelioid giant-cells in the lymph-nodes. There was also some fibroblastic proliferation in and adjacent to the corpuscles. A scattering of eosinophils was seen.

At the post-mortem examination, a culture was taken from the axillary lymph-nodes, and a pure culture of the diphtheroid organism was obtained. This grew very feebly for several generations but finally acquired greater power of growth. This culture was used in inoculating Monkey 3.

MONKEY 3.—Female rhesus. Received April 11. Negative to von Pirquet test. April 26, first injection of two slants of a twenty-four-hour growth of culture X. F. A. subcutaneously into right thigh. Subsequent to this and up to August 17, ten injections of the same organism were made in the same location, and with the uniform result of the development of

* From the Pathological Laboratory of the University of Wisconsin.

* This work has been aided by a grant from the Rockefeller Institute of Medical Research.

1. Bunting, C. H., and Yates, J. L.: An Etiologic Study of Hodgkin's Disease, THE JOURNAL A. M. A., Nov. 15, 1913, p. 1807.

induration and glandular enlargement which subsided gradually. On one occasion, June 21, inoculation resulted in the formation of a subcutaneous abscess from which the diphtheroid organism was recovered in pure culture. This was subsequently used for inoculation in the hope that it might have acquired some increased virulence.

October 25, there were but shot-like glands in the right groin and it was felt that the animal was refractory to the culture.

October 31, inoculation was made into the right axilla of the scrapings in salt-solution of 3 slants of an almost invisible growth on egg-medium of the diphtheroid organism recovered from Monkey 3. The salt solution suspension appeared almost clear. There was no immediate sharp glandular reaction and one week later no sign of reaction along needle track.

December 6, there was a large, lobulated, indurated mass along pectoral edge and extending high in axilla, and consisting of enlarged glands distinct in outline but with connecting sclerosis. The lower glands were over 1 cm. in diameter, while high up in the axilla the glands appeared about 5 mm. in diameter. At the most prominent low point was a softened area with discharging sinus. The material discharged on pressure was a thick white material resembling broken-down glands.

December 19, the wound was still discharging, and in the left axilla was an infected skin wound (apparently self-inoculation) with several enlarged lymph-nodes palpable above it.

December 31, a second softened area appeared in the right axilla about 3 cm. above the first.

LEUKOCYTE COUNTS IN MONKEY 3

	Total	N.	E.	B.	S.L.	L.L.	L.M.	Tr.
April 17	15,600	34.2	1.4	0.2	54	3.8	1.0	5.4
July 2	.....	22.4	7.8	0.2	57.4	5.8	0.2	6.2
July 12	19,000	25.2	4.2	0.2	60	4.2	0.4	5.8
October 31	.....	49.4	4.8	0.0	37.2	4.0	0.0	4.6
December 6	13,000	42	0.8	0.0	46	4.2	0.4	6.6
December 19	15,000	48	0.2	0.0	38.8	4.0	0.0	9.0
December 31* ...	.....	70 2	0.0	0.0	19.4	2.2	0.0	8.2

* December 31, 4 nucleated red cells to 500 leukocytes were found.

N=neutrophils; E, eosinophils; B, basophils; S. L., small lymphocytes; L. L., large lymphocytes; L. M., large mononuclears, and Tr, transitionals.

MONKEY 2.—Male rhesus, received from New York April 11. April 19 the first injection of a twenty-four-hour slant-growth of the culture X. F. A. was made into the right tonsillar region. When it was found that the enlargement of the cervical glands that resulted did not persist, the place of injection was changed to the cervical subcutaneous tissue, on account of the difficulty of reaching the tonsil without etherization. Three injections were made in the neck region. Then on June 30 the place of inoculation was changed to the right axilla. Here six injections were given, the dose being increased, until on August 17 four slants of a twenty-four-hour growth were injected. The intervening injections had resulted in the development of axillary induration, associated with glandular swelling which had persisted for about a week after the injection. After August 17 no injections were given. On September 15 a moderate enlargement of the right axillary glands was noted. This continued, and on November 1 there was in the right axilla a large, lobulated mass roughly 2.5 by 3 cm. in diameter; apparently made of five or six discrete glands with a certain amount of interglandular sclerosis.

November 23, under cocain, a gland was removed, cultures made, tissue fixed for study, and a portion of the gland implanted in Monkey A4.

Macroscopically the gland showed large, opaque, softened, necrotic areas, surrounded by more translucent hyperplastic tissue. The softened material had the consistency neither of true pus nor of tuberculous caseation.

Histologically, the gland showed areas of necrosis infiltrated by leukocytes. There was some scarring of the gland. Outside of the necrotic areas the architecture of the gland was lost. The tissue was cellular, showing relatively few lymphocytes, but large numbers of endothelioid cells, many of which had very large nuclei, of the giant-cell type. Eosinophilic infiltration was present and marked in some areas. There was a periglandular sclerosis.

LEUKOCYTE COUNTS IN MONKEY 2

	Total	N.	E.	B.	S.L.	L.L.	L.M.	Tr.
April 17	32,000	50.6	8.0	0.0	34.6	2.0	0.8	4.0
April 21	15,600	71.6	4.0	0.8	15.6	2.6	0.2	5.2
April 24	24,400	65.4	3.8	1.2	20.0	2.4	0.6	6.6
October 28	19,000	44.6	7.2	0.4	37.6	2.6	0.0	7.6
November 14 ...	20,000	35.8	7.0	0.0	42.8	4.3	0.4	9.7
December 31	.....	43.3	2.9	0.4	33.7	5.6	0.4	10.7

One nucleated red blood-cell to 500 white blood-cells noted October 28; 1 November 14, and 2 to 500 December 31.

A pure culture of the diphtheroid organism was found in one serum-tube on which a piece of gland was planted.

December 6, the wound was perfectly healed, but an area of softening had developed at some distance from the wound and at the lowermost prominent point of the enlarged mass.

December 26, the skin was found necrotic at one point over this area, and a thick necrotic material exuded on pressure. A diphtheroid organism was found in smears from this material.

December 31, skin sinus appeared healed and dry. No further softening.

MONKEY A4.—Large male rhesus.

November 23, right axilla shows only small shot-like glands high up. Under cocain anesthesia, a piece of gland from Monkey A2 was implanted in the right axilla. Fascia and skin were stitched separately.

December 6, wound was found perfectly healed. Several moderately enlarged glands were felt above site of implantation.

December 19, several enlarged glands in axilla formed a mass roughly 2 cm. in diameter.

THE CORRECTION OF THE FIXED STRUCTURAL TYPE OF SPINAL LATERAL CURVATURE *

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INTRODUCTION

Notwithstanding the fact that in the past so much has been written with regard to the treatment of the fixed structural type of spinal lateral curvature, it has generally been conceded that little progress has been made and that the results obtained have been far from satisfactory. It has been generally recognized, indeed, that patients with bony rotation could not be anatomically straightened, and in selected cases only could they be improved.

Many theories concerning the mechanism of the spine have been advanced at different times, but with little or no result so far as the correction of the spine is concerned, and not more than a year or so ago it was generally recognized by all who tried to treat the fixed types of scoliosis that little or no headway toward remedying the condition could be made. Even though the contour of the trunk had been changed after a number of years of constant treatment, the radiograph still showed not only

* Read in the Section on Orthopedic Surgery of the American Medical Association, at the Sixty-Fourth Annual Session, held at Minneapolis, June, 1913.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

that forward rotation of the vertebrae had not been accomplished, but also that the correction, if any, was due to the changing of the contour of the ribs. The mechanism of the spine was considered very intricate by many of the writers, among whom there existed a controversy on some of the essential points of its mechanism. The diligent work done by many, however, has led (even though by means of elimination) to a better understanding of the mechanics of the spine and has evolved a new principle with respect to the treatment of the fixed structural types of lateral curvature. The results obtained to-day in structural cases with bony deformity would have been considered unbelievable a few years ago, especially that the vertebrae can be rotated, the conformation of the ribs changed and a deformed trunk made to assume the position of the normal trunk; not only may the displacement of the viscera be corrected, but also actual bony changes can be caused. Abbott has given us new inspiration to attack cases which formerly were considered impossible, and his theory has been backed by the results obtained in his work, which are demonstrated not only by the altered external contour, but through verification of the change of contour as shown by the radiogram.

Fig. 11.—Photograph taken in Case 5 after ten months' treatment by various methods.

Fig. 12.—Photograph taken in Case 5 after four corrective jackets had been applied.

MECHANICS OF THE SPINE AND EXPERIMENTS ON THE CADAVER

For the purpose of thoroughly studying the spinal movements irrespective of curves, and obtaining a better understanding of the movement of the normal spine, the cadaver was used. The object of the work was not to produce lateral curvature, but to put into practice the two methods of treatment which have been so frequently written of, namely, the method of hyperextension and the method of flexion, the latter being practically Abbott's method. The questions immediately arose in my mind: Is it possible to rotate the vertebrae in the dorsal and lumbar regions with the spine hyperextended? Is it possible to obtain more motion and more rotation in the dorsal and lumbar region with the spine in flexion? What is the effect of side bending in regard to hyperextension and flexion?

Since performing the experiments in which roentgenograms of the cadaver in the different positions were made, a much better understanding has been afforded me and many doubtful problems have been solved to my satisfaction. The cadaver in an upright position was firmly anchored at the pelvis; an iron pipe was crossed anteriorly and anchored at the shoulders for the purpose of controlling rotation; long hatpins were driven into the spinous processes and numbered; the cadaver was placed in eighteen different positions and records made, after which roentgenograms of it in different positions were made, from which the following conclusions were arrived at:

CONCLUSIONS DRAWN FROM EXPERIMENTS ON THE CADAVER

That forward traction of the spine opens the articulations and unlocks the spine. Hyperextension locks the spine, most in the lumbar region and somewhat in the dorsal. At the junction of the twelfth vertebra there is a weak spot, which allows some rotation, but the twelfth vertebra follows the action of the lumbar vertebrae rather than the dorsal. Forward traction and side bending with rotation places the spine in the most favorable position for complete freedom of all the vertebrae.

TREATMENT

In considering the treatment, as previously remarked, the spine itself is not the prime factor, but the trunk as a whole must be considered. Only within the last two years has it been shown that in many of the fixed structural types patients can be completely straightened and, in the severer types, benefited both with regard to the deformity and especially to the general health; but it is necessary to consider not only the bony structures, but also the clinical entities relative to the viscera. I have been impressed by this fact in some of the far-reaching and excellent results that have been obtained in many patients after a comparatively short treatment, and even before the treatment has been entirely completed.

Since the flexion treatment has given such excellent results in a comparatively short time, those of us who have much to do with these cases which were formerly considered hopeless, or in which, at best, it was only possible to prevent the deformity from growing worse, thus consider that a new epoch has been entered on in the treatment of the fixed types of lateral curvature. This is proved by the fact that many of the patients now being treated, and in whom marked improvement has been noted, had previously received various treatments over periods of from two to ten years, but had not been corrected anatomically, nor had the spine actually been unrotated or the deformity been entirely corrected. Figures 11, 12, 13, 15, 16 and 19 very well illustrate these statements.

In considering the treatment of any given case, there are several procedures necessary so that the operator will not deceive himself as time passes, but may be able to refer to accurate records in connection with the case.

1. A thorough physical examination of the chest, to determine the condition of the heart and the lungs, with a blood-pressure or any other test or chemical analysis which the internist may deem necessary.

2. Thorough and accurate measurements with the scoliometer (Fig. 8) and records of the general posture and contour of the chest at any given level of the trunk.

3. Satisfactory roentgenograms before treatment is begun and through the cast during the process of correction. For this purpose I have devised a scoliometer and Roentgen-ray equipment.

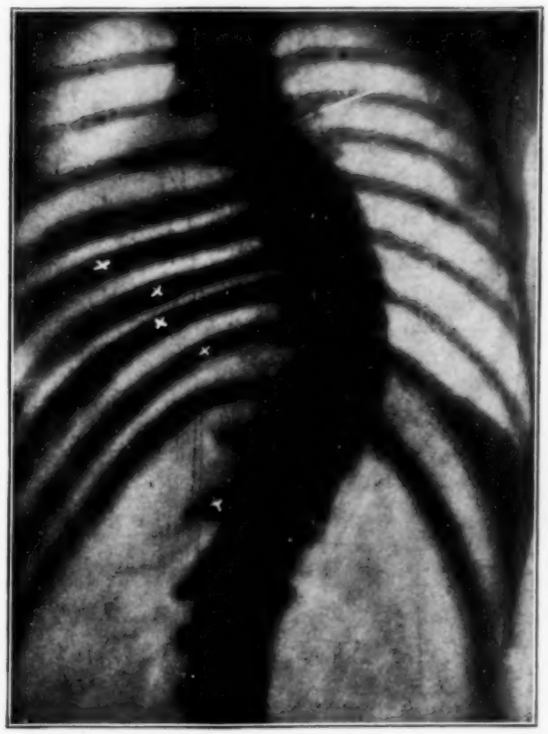

Fig. 13.—Roentgenogram taken in Case 5 before flexion treatment began. Note rotation of dorsal and lumbar vertebrae, also asymmetry of ribs.

The treatment of the structural type heretofore has been chiefly what I prefer to call the hyperextension treatment, or the treatment of Wullstein, by traction and hyperextension. I have always believed it unsatisfactory, and because until recently I have felt a certain amount of hesitation with regard to these cases I have refrained from speaking or writing of this type.

In view of the gratifying results which we have obtained after much study, experimenting and work in the very cases which formerly could not be successfully treated, this paper seems justified. The new treatment is practically flexion treatment, in which the spine is unlocked, the ribs are rotated and lateral traction is applied, after which the trunk is fixed with a plaster dressing. Aside from the discomfort occasioned by the wearing of the plaster jacket, comparatively little pain has been encountered, and this is attributed to the method of procedure.

RECORDING SPINAL CURVATURE AND THE DEFORMITY OF THE TRUNK—MENSURATION

After the patient has been carefully examined, both by the orthopedist and the internist, or the family physician, careful records of the case should be made. The patient should be placed in an accurate scoliometer; the general contour of the thorax and the distortion of the ribs, together with the general poise of the pelvis, should be recorded. The lateral deviation of the spine and the angles of the scapulae should be marked with India ink and photographed through a graduated screen (Figs. 11, 12, 15 and 16). With a carefully constructed scoliometer, the personal equation will be minimized and a thorough reading of the records is obtainable many months after the case has been recorded. The record taken by the scoliometer gives not only the contour of the thorax and the distortion of the ribs, but also the lateral deviation of the spine and the relation of the trunk at a given level to the pelvis.

I have described[1] the scoliometer at length, and have suggested a pelvithoracic triangle, which records the pelvic and any other cross-section of the trunk.

RECORDING BY MEANS OF ROENTGENOSCOPY

Roentgenoscopy has been advanced to such a degree that we can now hardly dispense with it whenever any question of deformity arises. It is becoming more and more standardized, and if the same apparatus is used each time it becomes a very valuable and accurate method of observing the spine. Especially is this true with regard to the condition of the lateral curve and rotation, as it shows the difference in the lumbar and dorsal rotation, as well as the displacement of the heart, diaphragm and, if one wishes, the stomach and intestines.

It has been said by some writers that they do not believe in roentgenoscopy relative to lateral curvature. This may be due to the fact that they either have not the equipment or do not wish to expend the energy and expense that is required to undertake this procedure.

Fig. 14.—Roentgenogram taken in Case 5 after sixteen weeks' flexion treatment. Compare with Figure 13, noting position of spine and separation of ribs.

The comparative value of these records is clearly shown in Figures 13, 14, 19 and 20. It is commonly known that the spinous processes in lateral curvature do not give a true clinical indication of the actual condition of

1. Meisenbach, R. O.: Am. Jour. Orthop. Surg., May, 1912.

the spine. The spine is usually very much more curved than the casual examination of the patient indicates. This is due to the fact that the rotated bodies lie deeper and more to the convexity of the curve than the spinous processes do. Also, the spinous processes vary in length in different persons. This naturally is deceptive and must be guarded against by the orthopedist. It may also be easily recognized from the roentgenograms that the contour of the ribs changes. On the convex side usually we have sharp angular ribs, and on the concave side depressed, flat, adjoined ribs. After the first corrective jacket has been applied, the ribs on the concave side usually will show a tendency to separate and to assume a curved form, and conversely those on the convex side rotate and become less prominent. This can be observed only by means of roentgenoscopy.

The patient is placed prone with or without the jacket. If the jacket is worn the roentgenoscope is slightly elevated to permit the photographic plate to pass beneath, so that the patient does not rest on the plate proper, but is suspended by the canvas stretcher (Fig. 9). The Roentgen-ray tube is placed in the median line and directly above the patient. The exposure may be made directly through the plaster jacket. Unless the spine, during the process of correction, is roentgenographed through the plaster jacket it will be difficult to arrange the padding satisfactorily and comprehensively; also, it will be difficult, or well-nigh impossible, to have a thorough understanding with regard to cutting the windows (Fig. 20) in the corrective jacket, which is most essential in the flexion treatment (Fig. 20).

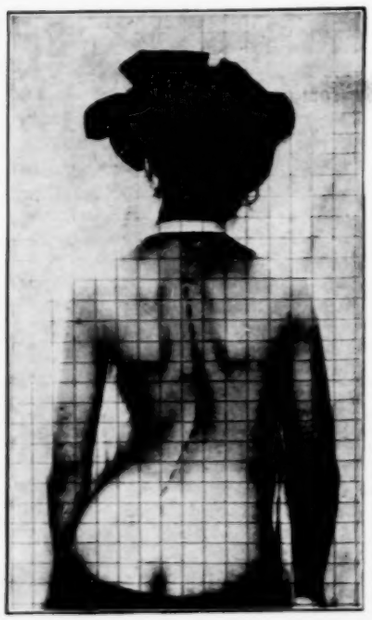

Fig. 15.—Photograph taken in Case 6 after one and one-half years' treatment by various methods.

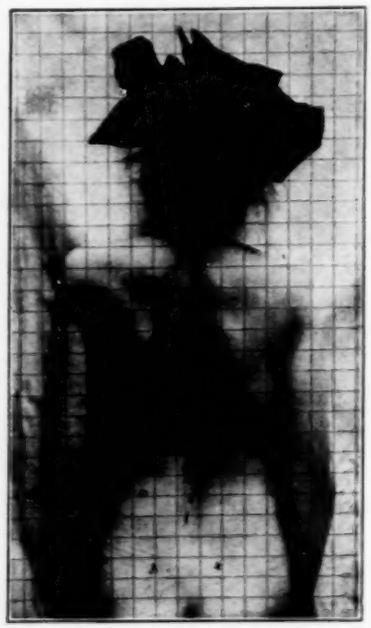

Fig. 16.—Photograph taken in Case 6 after seven weeks' flexion treatment. Note the change in trunk.

Space will not permit the details of each procedure. If the method is pursued as described one can almost exactly state the amount of gain that is being accomplished; the position of the spine will at all times be known to the operator, and when the next jacket is to be applied the roentgenogram will be of great assistance to him in indicating the amount and position of the pressure and traction to be applied.

CORRECTING THE DEFORMITY AND THE LATERAL CURVATURE

After thorough study of the patient with the records which have been made, the patient should be placed in the most favorable condition for correction, as is the case in any procedure in which manipulation is to be undertaken. In the cases in which cardiac involvement is present, extreme precaution should be taken. Psychically, they should be placed in a hopeful frame of mind, and should not go to the operating-room without being sufficiently nourished. It has been my custom to secure perfect quiet on the part of the patient during the night before applying the first corrective jacket, also to explain freely to the patient the modus operandi, so that the sight of the complicated apparatus will not change the blood-pressure or pulse rate. The nurses and assistants should be well trained in team-work, so that the patient will be in the frame only a minimum time. After the patient is in the frame the procedure should continue uninterruptedly, and just before the tractions have been applied the Roentgen-ray tube should be applied over the patient with careful study with regard to the anatomic landmarks. In compound curves this is more essential than in total curves, as in the compound curves one may do much harm, especially after the second jacket has been applied. It is my rule to throw compound curves into total curves and then to correct the total curve rather than to attempt to correct both curves. In some compound curves the dorsal convexity can be corrected by correcting the dorsal curve, allowing the lumbar curve to adjust itself. This has been my experience in a few instances.

After the jacket is applied, the patient is placed face down on the truck, which has previously been heaped with pillows. The Roentgen ray should again be used at the time of cutting the posterior window. Those patients in whom there is a complication of heart disease should remain in bed for a day at least.

RESULTS OBTAINED

The question immediately arises: Shall we attempt to correct the severe types which are so frequently seen, those in which the spine is so curved and rotation so marked that the ribs have been forced into the iliac fossae, or in which the heart has been so displaced and the nerves so deranged as to cause the patient to be most apathetic and fretful? Many of these persons, either through experience or through the medical profession, have learned that their cases are probably hopeless; therefore, they look on any procedure with skepticism. I firmly believe that even in the severer cases, except in those in which the deformity is in the cervical region, the flexion treatment should be used, with a view to raising the ribs, increasing excursion and benefiting the general health, rather than to making the actual anatomic correction.

RECAPITULATION

1. The chief causative factors of scoliosis are muscular weakening, together with the anatomical construc-

tion of the torso. A lateral curve may be considered as a sequence rather than as a primary entity. It may be induced in many ways, through disease, posture, congenital defects or variation of the bony skeleton.

2. There are practically two types of backs, the flat and the lordotic. Each of these, occurring in children,

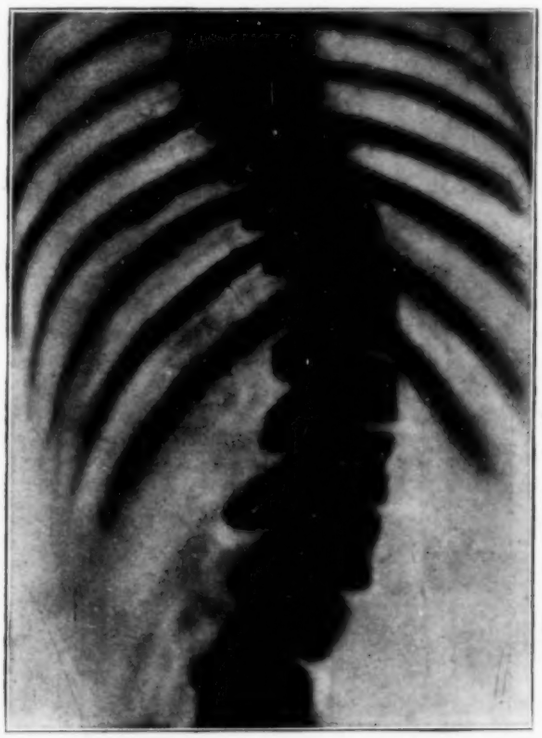

Fig. 19.—Roentgenogram taken in Case 6 before flexion treatment began. Note rotation in dorsal and lumbar vertebrae. Rotation in lumbar vertebrae almost one-quarter round.

must, according to Wolff's law, affect the anatomy of the torso.

3. The spinal action is closely allied to the anatomic construction, as is shown by the articular processes of the twelfth dorsal, the dorsal and the lumbar vertebrae.

4. Experiments on the cadaver, both with and without the Roentgen ray, show that hyperextension locks and flexion unlocks the spine; that in hyperextension the lumbar spine is completely locked, whereas the dorsal is only partially locked and admits some rotation. In forward flexion and side bending the spine is in the best position for correction and for the rerotating of a lateral curve.

5. There are three types of scoliosis, the congenital, postural and structural. The structural is the most difficult to treat, as it involves the consideration not only of the spine, but also of the viscera of the torso, and the general condition of the patient. In the fixed structural type the ribs and vertebrae have become deformed, the ligaments have contracted and the viscera are displaced. The postural type is a forerunner of the organic, and if left alone will cause bony changes and therefore should receive attention early.

6. In considering any case for treatment, complete records of the case should be made by means of special apparatus (the scoliometer), the anatomy of the patient should be studied by means of roentgenograms and the patient thoroughly gone over by the internist or the family physician. If this is done, the risk to the patient will be minimized, even in the severer types. The displacement of the heart, with heart-murmurs, together with symptoms of anemia or gastric disturbance, are not necessarily contra-indications for treatment, but it is often the case that these conditions and symptoms improve after the spinal correction has been undertaken. In some cases the percentage of hemoglobin is increased after correction. It is a common occurrence in patients afflicted with scoliosis and lack of excursion of the ribs to find suboxygenation resulting from the deformity. The excursion of the ribs can best be improved by the correction of the spinal deformity.

7. Since it has been proved that the spine can actually be rerotated and the deformed ribs remodeled, as it were, many of the cases which were formerly considered hopeless may now be much improved and straightened.

8. Persons with extreme scoliosis may be very much improved in regard both to the general health and to the deformity, and, therefore, should receive a careful consideration. The mild types, and even those which formerly were considered beyond help may now be anatomically corrected when skilfully treated.

9. The new method of treatment is comparatively rapid, and in some instances surprisingly rapid, when compared with the old methods, and pain is not necessarily in proportion to the deformity, but its absence in the process of correction depends much on the technic.

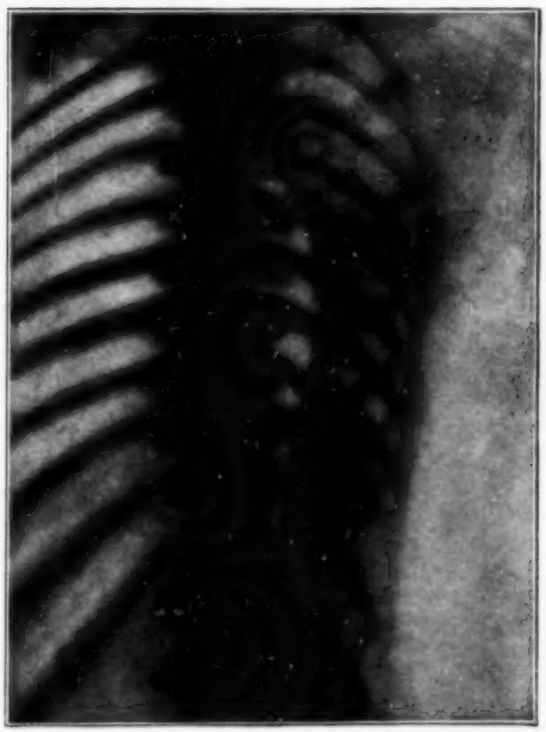

Fig. 20.—Roentgenogram taken through plaster jacket in Case 6 seven weeks after correction. Window in jacket plainly seen. Spine is straight; vertebrae rerotated. Position of padding to be added is easily determined by means of such roentgenograms.

10. It is the duty of every practicing physician to look carefully over any doubtful cases which may suggest flatfoot, or any irregularity in posture, because these deviations from the normal may be forerunners of lateral curvature and, later on, of a severe deformity of the spine.

ABSTRACT OF DISCUSSION

DR. JOHN L. PORTER, Chicago: Dr. Meisenbach seems to be working out the same problem that all of us are concerned with in scoliosis, trying to find the best method of technic for carrying out the ideas that Dr. E. G. Abbott of Portland, Me., gave us. Dr. Abbott told me that he learned something every time he put on a new cast. I find that characteristic of my own work. I have treated fifty-seven cases by the Abbott method, and have not put on any two jackets alike. I have learned something new every time I put one on. The great function of the Committee on Scoliosis of the American Orthopedic Association is to help us to standardize our methods of recording indications and of analyzing and sifting what little we all learn, as we try to do this work.

HYGROMA CYSTICUM COLLI AND HYGROMA AXILLARE *

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CASE 1.—*History.*—My first case of hygroma cysticum colli, or at least the first one in which the condition was recognized, occurred in J. R., aged 12, of Winsted, the patient being referred to me by Dr. David Reidy. The family history was irrelevant. The patient had pneumonia at 9 and meningitis at 18 months. At 2½ years a swelling in the left cervical region was noticed; at 10 years, following a blow by a snowball, the growth enlarged more rapidly. He was a well-developed, wholesome-looking, normal boy of good color. The physical examination was practically negative, except that a large cystic tumor existed in the left cervical region, extending from the lobe of the ear nearly to the clavicle (Fig. 1). There were no enlarged lymph-nodes. Diagnosis: cyst of undetermined character.

Operation.—July 31, 1911, at the Charter Oak Hospital, a curved incision was made just below the ear downward, forward and upward, the flap dissected and a thin-walled multilocular cyst exposed. The anterior jugular vein was ligated, and the branches of the facial nerve exposed and protected. The cyst was found intimately connected with the parotid gland, its upper attachments being in close proximity to the styloid process, and was removed intact. It contained a clear, watery fluid. The wound healed primarily, and there has been no recurrence.

Pathologic Report (by Dr. Henry C. Russ).—Macroscopic Examination: Specimen consists of a collapsed cyst from the neck, the contents having escaped. The cyst measures 7 by 3.5 cm.; its wall is tough and fibrous, though quite thin. The cavity is lined by a shiny membrane. The inner wall is much trabeculated and shows numerous pouches of varying size communicating with the main cavity, giving the whole a very multilocular appearance.

Histologic Examination: The membrane lining the cyst is composed of flattened endothelial cells arranged in a single layer. The wall outside is made up of fibrous tissue and fat. In the fibrous tissue are numerous capillary blood-vessels and lymph-spaces, the latter varying much in size, some being large enough to merit the name of small cysts. Scattered also in the fibrous tissue are numerous small areas of lymphoid cells. Surrounding the main cyst cavity in a narrow zone are small bundles of fibers morphologically like smooth muscle cells (Figs. 2 and 3).

CASE 2.—*History.*—The second case, in a man aged 20, a student, referred by Dr. A. E. Abrams, came under our observation July 15, 1913. The family history is irrelevant. The patient has never been seriously ill. In September, 1912, he noticed a tumor in the left axilla which has grown steadily and is of large size; is soft, not movable or tender. He is a good-sized, well-nourished, wholesome-looking boy with practically negative physical examination, except a large, fluctuating, oblong-shaped tumor in the right axillary space extending below the nipple line, 15 cm. in length and 8 cm. in breadth. Diagnosis: hygroma cysticum axillare.

Operation.—July 15, 1913, at the Hartford Hospital, a vertical incision was made over the tumor. When the skin and fascia were incised a very thin-walled multilocular cyst tensely distended with watery fluid was exposed and readily dissected from its upper attachments under the clavicle to its lower extremity at the eighth rib. From 250 to 300 c.c. of fluid were contained in the various compartments of the cyst. The incision was closed without drainage. A hematoma formed which delayed somewhat the process of repair. Recovery, however, was satisfactory, the wound healing kindly. Up to the present there has been no recurrence.

Pathologic Report (by Dr. John Carter Rowley).—Macroscopic Examination: A sac of thin tissue 10 cm. long and 4 cm. in diameter. The walls of the sac are very thin and grossly present no abnormal structure. Specimen shows two lymph-nodes, fat and tissue, and apparent remains of cyst wall lined with endothelial cells.

CASE 3.—*History.*—Since the two preceding cases were reported a third case of hygroma cysticum has come to my notice. The patient (Fig. 4) was operated on by Dr. Arthur M. Rowley, visiting surgeon at the Hartford Hospital, by whose kind permission I am allowed to report it at this time. The operation was performed Oct. 7, 1913. The patient, a girl baby, R. M., aged 14 days, referred by Dr. H. J. Onderdonk, East Hartford, Conn., was delivered instrumentally without untoward incident and is breast-fed. At the time of birth a swelling in the left axilla the size of an English walnut was observed. The mass grew rapidly, extending downward.

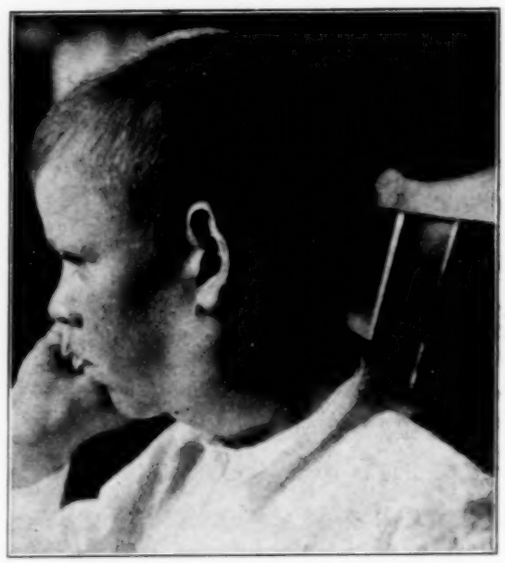

Fig. 1.—Patient (Case 1) with hygroma cysticum colli.

Physical Examination.—The child is healthy looking, of normal size and good nutrition, with skin and mucous membranes of good color. Examination of lungs, heart and abdomen is negative. The fontanels are flat, not enlarged. There is no epiphyseal enlargement of long bones. Extending from clavicle to 2.5 cm. below the left nipple, and from midclavicular line to slightly beyond the posterior axillary line is a lobulated non-inflammatory tumor the size of a medium orange. It is slightly movable at the chest wall. The skin over it is adherent and has a few small lobules. The lobulations have no pulsations. Axillary lymph-nodes are not enlarged. There is edema of the arm. Diagnosis: hygroma cysticum axillare.

Operation.—Oct. 7, 1913, at the Hartford Hospital, under chloroform anesthesia a 10 cm. incision extending from the

* Read before the Surgical Section of the Hartford Medical Society, Nov. 24, 1913.

anterior axillary line downward and mesially over the tumor was made. A large, thin-walled, multilocular cyst containing clear serous fluid arising from the fascia of the apex of the axilla and attached to the skin was removed intact. Axillary vessels were exposed, and the fascia of the pectoralis major under the tumor removed. Skin was closed with horsehair sutures without drainage. Primary union and prompt recovery followed.

Pathologic Report (by Dr. John Carter Rowley).—Macroscopic Examination: Specimen removed from the left axilla of infant R. M. consists of a mass 5 by 8 cm. of thin-walled cysts containing clear, serous fluid. The cysts vary in size from 1 or 2 mm. to 4 cm. in diameter. The cyst walls are smooth and glistening and of a pearl color with numerous subsidiary sacs projecting from the larger ones. The walls of the cysts are of fibrous tissue with here and there strands of fat.

Histologic Examination: Section shows many cysts of various sizes in supporting structure of connective tissue. The connective tissue is very vascular with a few small areas of extravasated blood and clumps of fat-cells. The cyst walls in places are lined by a thin layer of endothelial cells. In most places this is lacking.

The literature on hygromas is meager, and the nomenclature is confusing. The term has been applied among

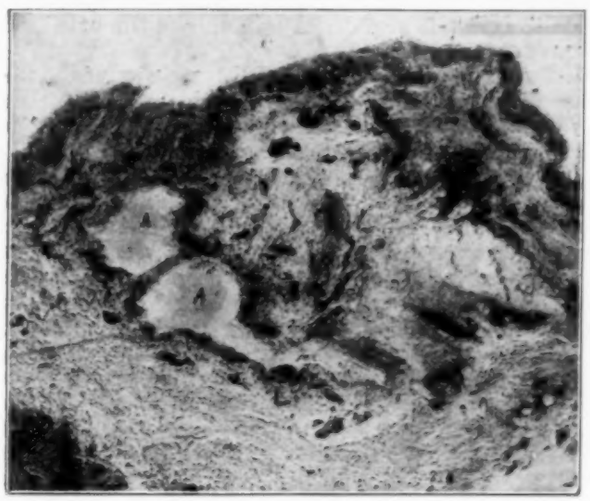

Fig. 2.—Wall of hygroma; low-power magnification. Upper margin is inner endothelium-covered wall of cyst cavity; *A*, *A*, lymph-spaces in wall of hygroma.

other conditions to collections of fluid in synovial cavities and tendon sheaths, but is now rarely used to describe these conditions and is understood to mean a thin-walled, multilocular cyst containing clear fluid, lined with endothelial cells and possessing unusual tendency to grow. Such cystic growths are comparatively rare.

Dowd[1] has made a careful compilation of the statistics after a thorough search of foreign and domestic literature. Ninety-one cases of hygroma cysticum colli, thirty-five cases of hygroma cysticum axillare, and eleven cases of hygroma cysticum (general) were collected, and these were all that could be found. Adding Dowd's three cases of hygroma cysticum colli to the table which he compiled, and the two cases of hygroma cysticum colli herewith reported, brings the number up to ninety-six. Dowd's case of hygroma cysticum thoracis would bring the table of hygroma cysticum (general) up to twelve. The two cases of hygroma cysticum axillare herewith reported would bring that class up to thirty-seven.

These tumors vary in size from small affairs to enormous disfiguring growths, usually occurring in the neck and sometimes extending downward under the clavicle, penetrating the mediastinum or passing under the clavi-

Fig. 3.—Diverticulum in wall of hygroma showing endothelial lining; high-power magnification.

cle into the axilla or pectoral regions. They are frequently congenital and are usually seen in children. Dowd says that the most satisfactory explanation of the existence of these hygromas is that embryonic sequestrations of lymphatic tissue existed and that they had the power of persistent regular growth.

Adami, in his work on pathology, says that we must suppose that with increasing distention there has been a closing of the channel of which they are a dilatation; that the endothelium has grown *pari passu* with the dilatation, and that this endothelium has secretory powers. The mere force of the lymph flow cannot explain such extreme development; we have to assume active excretion, which, indeed, is indicated by many other considerations and actual experiments.

The operative rarity of these cases is responsible for incorrect diagnoses. Undoubtedly such cysts have been removed and classified as of branchial or thyroglossal

Fig. 4.—Patient (Case 3) female; aged 14 days, with hygroma cysticum axillare.

origin. As they grow to enormous size they are most disfiguring and do not tend to spontaneous recovery. Their early recognition and careful dissection is important.

I wish to express my appreciation to Dr. A. J. Wolff for the photomicrographs of Case 1, and to Drs. Henry C. Russ and John Carter Rowley for their pathologic reports.

44 High Street.

1. Dowd, Charles N.: Hygroma Cysticum Colli: Its Structure and Etiology, Ann. Surg., 1913, lviii, 112.

ACTION OF THE NITRITES ON THE ISOLATED SURVIVING PULMONARY ARTERY

PRELIMINARY NOTE*

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The regulating mechanism of the "lesser" or pulmonary circulation, and in particular the vasomotor control of the lungs, is a problem which for a long time engaged the attention of some of the most skilful physiologists and may still be regarded as not entirely settled. Thus, for instance, while Openchowski,[1] Knoll,[2] Brodie and Dixon,[3] and recently Baehr and Pick,[4] doubt the existence of pulmonary vasomotors, Bradford and Dean[5] declare that such fibers are found, though rather poorly developed, and François-Frank,[6] Plumier[7] and Wiggers[8] stoutly maintain the presence of an efficient pulmonary nervous control. Still less is known in regard to the action of *drugs* on the pulmonary vessels. The study of this subject was approached by two chief methods: the one by recording changes in pulmonary arterial and venous blood-pressures the other by estimating the amount of fluid perfused through the lungs. Both methods are complicated, exposed to many sources of error, and give results difficult of interpretation. Thus epinephrin, about the only drug which has been studied in this connection, is said by some to have no effect on the pulmonary vessels at all, by others to produce vasoconstriction, and by still others to cause a dilatation.

I have for some time been engaged in testing the action of various pharmacologic agents on surviving rings or strips of the pulmonary artery, a method which in the case of the lungs has never been systematically tried. This method, through eliminating all other factors present in the living body, has the advantage of being clear-cut and affording information as to the effect of drugs directly on the artery alone. Within recent years the idea has been gaining ground that a drug may possess different and even opposite actions on the blood-vessels of different organs, not in the sense of a constriction in one set of vessels causing a greater flow of blood to another region and so passively enlarging the vessels there, but in the sense of constrictor or dilator effects being *actively* induced by the drug itself. For instance, it is well known that various digitalis bodies in moderate doses will produce a constriction of the splanchnic vessels and at the same time an active dilatation of the renal arterioles,[9] and again it has been shown by Janeway and Park[10] and others that epinephrin, while being a powerful vasoconstrictor, has a dilator effect on the coronary artery. It was with the hope of possibly finding analogous conditions in the case of the pulmonary artery that the research was undertaken.

* From the Departments of Pharmacology and Medicine, Johns Hopkins University.

1. Openchowski: Arch. f. d. ges. Physiol. (Pflüger's), 1882, xxvii, 233.
2. Knoll: Sitzungsber. d. k. Akad., Wien., 1890.
3. Brodie and Dixon: Jour. Physiol., 1904, xxx, 476.
4. Baehr and Pick: Arch. f. exper. Path. u. Pharmakol., 1913, xxiv, 66.
5. Bradford and Dean: Jour. Physiol., 1894, xvi.
6. François-Frank: Arch. de physiol., 1895.
7. Plumier: Jour. de physiol. et pathol. gén., 1904, vi, 655.
8. Wiggers: Jour. Pharmacol. and Exper. Therap., 1909, i, 341.
9. Jonescu and Loewi: Arch. f. exper. Pathol. u. Pharmakol., 1908, lix, 71.
10. Janeway and Park: Jour. Exper. Med., 1912, xvi, 541.

METHOD

The apparatus employed was very much the same as that used by Voegtlin and myself,[11] which is a modification of the original method of O. B. Meyer,[12] in studying the action of drugs on the coronary arteries. Rings, or more often in this research, strips of the medium-sized branches of the pulmonary arteries of pigs and oxen were used. Great care must be taken in dissecting the vessels not to overstretch or tear them. If freshly dissected and kept in Locke's solution in the ice-chest, the arteries survive two or three days or even longer. The best results, however, are obtained by using the arteries not more than twenty-four hours old. A single strip from 0.5 to 1 cm. long and from 3 to 4 mm. wide is quite sufficient to give demonstrable results.

The preparation is suspended in a small glass chamber filled with warm Locke's solution at the temperature of 37 C. (98.6 F.), through which a constant stream of oxygen is kept bubbling. One end of the arterial strip is fixed to the bottom of the chamber, while the other is connected to the short arm of a lever, the longer arm carrying a point for recording on a very slow kymograph. The glass chamber is immersed in a water-bath or jacket for regulating the temperature. Great care must be taken to keep the temperature and flow of oxygen constant.

The most difficult part of the experiment is the so-called "weighting" of the preparation, which for each kind of artery must be learned by practice. The artery when excised is in permanent contracture or "tonus," and the tonus must be overcome before its reaction to drugs can be studied. To do this a stretching load is attached to the long arm of the lever and the artery weighted or stretched until the tonus is overcome. This usually takes from fifteen to twenty minutes. After the artery has been relaxed, the stretching weight is taken off and a permanent or lifting weight is attached. Owing to the much poorer musculature of the pulmonary artery, the lifting weight was found to be much less than that required for the carotid or coronary. Whereas in case of the coronary the lifting weight is usually from three-fifths to two-thirds of the stretching weight, for the pulmonary it was found that a lifting weight which was from one-sixth to one-fourth of the stretching weight was the most suitable.

ACTION OF THE NITRITES

The action of many drugs—epinephrin, digitalin, digitonin, digitoxin, bufagin, atropin, ergotoxin and others—on the pulmonary arterial strip was tested. The effect of these different pharmacologic agents will be described in a later paper. I wish here to mention only the effect of the nitrites. The action of this group of drugs was found to be so remarkable and also of such practical interest that it was deemed worth while to describe it in this preliminary note.

Sodium nitrite, nitroglycerin, erythrol tetranitrate and amyl nitrite were each and all found to produce a *contraction* or constriction of the pulmonary arterial strip. This remarkable action of the nitrites, which have always been known as typical vasodilators, though unexpected, probably holds good in the living body too, as corroborated by some indirect evidence gathered by other observers. Bradford and Dean, observing simultaneously the blood-pressures in the carotid and pulmonary arteries of dogs, noted a rise of pulmonary

11. Voegtlin and Macht: Jour. Pharmacol. and Exper. Therap., 1913, v, 77.
12. Meyer, O. B.: Ztschr. f. Biol., 1906, xlviii, 352.

pressure after administration of nitroglycerin and amyl nitrite, which they erroneously attributed to "an action on the heart in such a manner as to weaken the efficiency of the left side so as to lead to the accumulation of blood in the right side." H. C. Wood, Jr.,[13] also by the blood-pressure method, noted a rise of pulmonary pressure after amyl nitrite, which he strongly suspected as being probably due to a pulmonary vasoconstriction. To quote his words, "It would seem almost proven by exclusion that the cause of the rise of pressure in the lesser circulation can be due only to contraction of the pulmonary blood-vessels." Finally, a French observer, Petitjean,[14] studying changes in pulmonary blood-pressure, and at the same time controlling his observation "colorimetrically" by direct inspection of the exposed lungs, also noted a rise in pulmonary blood-pressure and a blanching of the lungs after the same drug. It will be seen that the observations of all these investigators would tend to speak for a vasoconstrictor action of the nitrites.

After the effect of the nitrites on the arterial strip suspended in Locke's solution had been studied, the experiment was repeated, in order to approximate more to the condition in the living animal, by suspending arterial strips in blood-serum. Here too the same effect was observed. Finally the action of the nitrites was tested on strips of human pulmonary artery obtained from a fresh necropsy, and here too a vasoconstrictor effect was observed. It may be mentioned here that if preserved in fresh Locke's solution and kept in the ice-chest, I have seen such an artery respond to drugs twenty-five days after the post-mortem.

In view of the foregoing observations, it will be seen that in causing a constriction of the pulmonary vessels and at the same time being efficient peripheral and splanchnic vasodilators, the nitrites meet the ideal requirements for therapeusis of pulmonary hemorrhage. Turning to clinical data, we find even there already some evidence of that being true. Francis Hare[15] in 1906 reported nine cases of hemoptysis successfully checked by amyl nitrite. Rouget[16] in 1905 reported ten similar cases. Grace-Calvert[17] in 1907 speaks of having employed it successfully in pulmonary hemorrhage twenty times, and a few other cases are mentioned by Colman,[18] Smith[19] and Georges Bouilard.[20]

It is to be hoped that my observations may contribute to more rational therapeusis of pulmonary conditions.

The vasomotor action of the nitrites here described is not only interesting from the practical point of view, but also raises an equally interesting question as to the physiologic and pharmacologic explanation of that phenomenon. That is a subject, however, which I shall not discuss in this place, but which I hope to touch on in the fuller paper to appear in the *Journal of Pharmacology and Experimental Therapeutics.*

3218 Auchentoroly Terrace.

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14. Petitjean: Jour. de physiol. et de path. gén., 1904, vi, 655.
15. Hare, F.: Lancet, London, 1906, ii, 1435.
16. Rouget: Bull. et mém. Soc. Méd. d. hôp. de Paris, 1905.
17. Grace-Calvert: Lancet, London, April 6, 1907.
18. Colman: Scott Med. and Surg. Jour., May, 1905.
19. Smith, E. T.: Australian Med. Gaz., June, 1906.
20. Bouilard, Georges: Thèse, Paris, 1906.

Self-Preservation.—A knowledge of the laws of life is more important than any other knowledge whatever. . . . A knowledge which subserves direct self-preservation, by preventing loss of health, is of primary importance.—Herbert Spencer.

THE ENERGY INDEX

CARDIOVASCULAR ENERGY AS INDICATED BY THE ARTERIAL PRESSURE PER MINUTE

JOSEPH H. BARACH, M.D.
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Thus far we have had no reliable method for estimating the functional capacity of the heart, although much has been written on the work done along this line, nor have we a certain and easily applicable method for determining the velocity of the blood. Aside from these, we need an index to the intravascular tension and to the amount of energy which the circulatory system expends in the course of a minute, an hour or a day. We need these particularly when we are dealing with cases in which the heart or the blood-vessels are endangered.

The best means which we have at present for determining the expended energy of the circulatory system is the use of the mercury manometer. With this instrument, by the auscultatory method, we can accurately measure the arterial pressure at the time of systole and at the time of diastole of the heart. The systole gives us the energy factor in the work of the heart. The diastole gives us the energy factor in the peripheral resistance. From the pulse-rate we know how many systoles and how many diastoles to each minute there are in the arterial tree.

For example, if the maximum pressure is 120 mm. Hg, the minimum pressure 70 mm. Hg and the pulse-rate 72 per minute, the exertion in one minute would be:

In systole	120 mm. Hg × 72 =	8,640 mm. Hg
In diastole	70 mm. Hg × 72 =	5,040 mm. Hg
In both	190 mm. Hg × 72 =	13,680 mm. Hg

This, according to the most practical means we have, represents the total effort exerted per minute by the cardiovascular system. We may call it the energy index or S. D. R. index.[1]

The advantages of this method of indicating the expended energy of the cardiovascular system are that we are not deceived by the high maximum pressure when it is combined with a relatively low minimum pressure, or vice versa. It is a well-established clinical fact that the two pressures do not always tend in the same direction, and that one or the other may rise or fall.

Also in this method, we do not neglect to consider the pulse-rate, which is an absolutely necessary element in properly estimating the expended energy of the cardiovascular system in a given length of time.

Judging by the clinical reports of the present day, the pulse-rate heretofore has largely been left out of this consideration. It is true that the number of pulse-beats per minute is not the greatest factor in producing high blood-pressure; but that each ventricular systole plays its part in the total blood-pressure is obvious, and that a greater number of systoles represents a greater total energy expenditure and a greater wear and tear is also clear enough. It is the last-mentioned factor particularly which we may aim at estimating in our clinical work, and for which the S. D. R. index is most useful.

1. This method for obtaining an index to the cardiovascular energy is so simple that when its utility occurred to me I scarcely thought it possible that it had not been suggested long ago. In a search through the literature at my command, I have not, however, been able to find it. Certain it is that it is not a recognized method, which I believe it deserves to be.

If we were to take into consideration the duration of the systole and the diastole in every case, our calculations would be still more representative of the total cardiovascular energy. According to Tigerstedt, in the normal person the average duration of the systole is from 0.19 to 0.382 second, and the diastole is 0.4 second. But the cases in which this would be an important clinical factor are the exceptions, although with the recording instruments, the actual time of both systole and diastole can be determined readily. On the other hand, absolute values would not necessarily aid us greatly in our diagnosis, prognosis or treatment. What we need for our every-day work is an index, and a point for the normal; after that our values are just as useful, so long as they are relatively true.

How enlightening this method is may be inferred from the findings in a series of 289 young men between the ages of 15 and 30 years (Table 1). There were 41 cases in which the maximum pressure ranged between 110 and 120 mm. Hg. Ordinarily, we should pass this over without much consideration; but on comparing the extremes of cardiovascular energy in this series, and in the subsequent ones, we soon see that the maximum pressure alone, on which most reliance has heretofore been placed, gives us not even an inkling of what is going on.

TABLE 1.—TOTAL ENERGY INDEX IN TWO HUNDRED AND EIGHTY-NINE CASES

Group	Total No. Cases	Maximum Blood-Pressure mm. Hg.	Extreme Instances	Maximum	Minimum	Pulse	Total Energy Index mm. Hg. per Min.
1	41	From 110 to 120	Case A	115	52	72	12,024
			Case Z	110	88	124	24,552
2	99	From 120 to 130	Case A	124	68	68	13,056
			Case Z	125	100	120	27,120
3	76	From 130 to 140	Case A	138	90	64	14,592
			Case Z	132	118	132	33,000
4	43	From 140 to 150	Case A	142	85	69	15,436
			Case Z	148	98	120	29,520
5	26	From 150 to 160	Case A	150	90	76	18,240
			Case Z	150	115	88	27,440
6	4	From 160 to 170	Case A	164	110	68	18,632
			Case Z	162	80	120	29,040

Case A and Case Z in each group are examples of the extreme cases in that group. Whether in Case Z of each of the groups the increased activity was physiologic or not, temporary or constant, is to be determined by reexamination and by other means. That there was present at the time of the examination a marked increase of activity over Case A, and how much the increase amounts to, can be determined best by utilizing the S. D. R. index—the energy index.

In Table 2 is presented a series of 116 normal cases in which the pulse-rate did not exceed 90 beats, and the minimum pressure did not exceed 100 mm. Hg.

TABLE 2.—TOTAL ENERGY INDEX IN ONE HUNDRED AND SIXTEEN NORMAL CASES

Maximum Pressure mm. Hg.	No. of Cases	Average Total Energy, mm. Hg.
From 100 to 120	16	15,196
From 120 to 130	59	17,086
From 130 to 140	22	17,450
From 140 to 150	12	18,722
From 150 to 160	7	20,705

Judging by Table 2 and in the light of what is known to be the normal maximum, the normal minimum pressure and the pulse-rate, it appears that the highest energy index in the normal person is close to 20,000 mm. Hg per minute.

For the sake of simplicity, I believe that it does not involve too great an error to strike off the last two figures of our totals and to say that in a given case the energy index is 151 or 170, as the first two total energy indexes in the series would show. Or we may designate the degree of hypernormal expenditure by the percentage of increase over 20,000. Thus a case with a total energy index of 30,000 may be designated as showing a 50 per cent. increase, and so on.

I have picked out of my records of the past year ten cases of advanced cardiovascular and renal involvement. These patients were all seriously ill, and recognized as such from the start. Up to the present time five of them have had apoplectic strokes. Cases 4, 8, 9 and 10, which are the younger patients of the series, each show an extraordinary amount of total energy expenditure per minute, and judging by their present symptoms, it seems only a matter of a comparatively short time until either the heart or a blood-vessel will give way, although we do occasionally see patients with very high pressure maintaining their health for long periods.

TABLE 3.—THE TOTAL ENERGY INDEX IN HYPERTENSION

Case No.	Age	Max.	Min.	Pulse-Rate	Total Energy	Remarks
1	66	182	100	74	20,868	Six months later, cerebral hemorrhage.
2	63	164	100	90	23,760	Eight months later, cerebral hemorrhage.
3	69	192	176	66	24,288	Six months later, cerebral hemorrhage.
4	50	235	120	84	29,820	Symptoms of threatened cerebral hemorrhage.
5	51	235	120	84	29,820	Six months later, cardiac failure.
6	59	220	140	84	30,240	One month later, cerebral hemorrhage.
7	54	200	140	108	36,720	One month later, cerebral hemorrhage.
8	52	220	160	96	36,480	Symptoms of cerebral angiospasm
9	35	180	145	120	39,000	Chronic nephritis; albuminuric retinitis.
10	56	280	140	120	50,400	Serious symptoms of cerebral arteriosclerosis.

A review of the figures in Table 3 makes it at once apparent how important it is that we include the complete triad—the maximum pressure, the minimum pressure and the pulse-rate—in order that we may obtain a definite idea of the cardiovascular energy expended, and of the strain under which the heart and the blood-vessels are laboring.

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THE PRACTICAL SIDE OF DERATIZATION WITH FLUE-GAS

WITH SPECIAL REFERENCE TO THE PORT OF PHILADELPHIA

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Although many writers have discussed the problem of fumigating vessels by the use of sulphur or its dioxid, very little seems to be known or written about the use of flue-gas for the destruction of rats on vessels. Surgeon W. G. Stimpson and Passed Assistant Surgeon Norman Roberts of the Public Health Service have written on this subject regarding the composition of flue-gas and its efficiency and use. The present article will treat of its practical application.

When a vessel is inspected at quarantine and requires fumigation, a letter of instructions is given to the captain, and arrangements made through the local agents for her fumigation at the anchorage or dock as

soon after her arrival as possible. A card is then filled out with the necessary data concerning the vessel and filed for future reference.

Coke is the agent employed for the production of the gas, and is burned in the furnace of the boilers of the quarantine vessel. It is spread evenly and to a depth of from 8 to 12 inches over the fire. A pipe leading from the side of the smoke-stack conveys the flue-gas to a tank in which the gas is cooled and washed. A blower operated by a turbine not only produces a forced draught and draws the gas into the washer, but also blows the gas through an upright pipe leading above the deck of the quarantine vessel, at which point connections are made with hose used to convey the gas to the vessel to be fumigated.

The personnel of the fumigating force consists, in addition to the crew of the quarantine vessel, of the officer in charge of the fumigation and two attendants. One of the attendants is assigned to the forward part of the vessel and the other to the aft, the engine-room being the dividing line. The attendants inspect the vessel and determine what connections are to be made, see that all compartments are properly prepared and act as watchmen to prevent accidents from the use of the gas.

Great care must be exercised in seeing that no one remains in the stoke-hold or engine-room during the fumigation. When the forecastle is being prepared, a careful search must be made in each bunk to make certain that no member of the crew is asleep, and all ports must be closed but not bolted. When there is a connection between the forepeak and forecastle, all hatches of the former compartment are opened, and this entire section is fumigated at one time. In the fumigation of compartments that have connecting doors, these are opened to allow the gas to be thoroughly diffused and make it possible to fumigate that particular section of the vessel without making more than one connection. All hatch-covers of holds must remain in place until after the fumigation. As the opening to the forecastle is usually not fitted with a door, a canvas cover must be provided.

The paraphernalia used in fumigation consists of canvas hose, metal pipes, a metal cone, a canvas apron with a hole of suitable size in the middle for inserting the hose, and a lantern. The cone is intended for use at port-holes that are either of smaller or larger diameter than the hose. The metal pipe is usually used when it is desirable to make a single connection between the side of a ship and hold. When openings are not fitted with suitable covers the apron is used.

The process of fumigation is as follows: After all connections have been made the blower is started, drawing approximately 1,500 cubic feet of gas from the furnace and forcing it into the compartment to be fumigated. An opening is provided at a point as nearly as possible opposite that at which the gas is being introduced, for the escape of air forced out by the gas. The lighted lantern is then lowered into the compartment to ascertain whether the gas is being properly diffused, the gas extinguishing the light when of sufficient strength on reaching the level of the lantern.

After the lantern is extinguished all openings are closed and the blowing continued for from five to ten minutes; the compartment is kept closed for from one-half to one hour, depending on the particular conditions. When compartments used for living-quarters are being fumigated, formaldehyd gas is introduced with the flue-gas to act as a warning to any one remaining therein.

Hatch-covers and ventilator-covers are removed after sufficient time has elapsed, the ventilators turned to the wind, and all doors, ports and other openings of living-quarters are opened. To determine whether or not a compartment is safe and free from gas the lighted lantern is again used, being lowered into the compartments or placed near the doors, and no one allowed to enter while the light is extinguished. When the light remains burning brightly for a short time, the compartment is considered safe for occupancy or ready for unloading. When little or no ventilation is provided in a compartment, the blowing of the gas is continued for a longer period than usual, and then fresh air blown in, which causes sufficient diffusion to expel all the gas.

While the vessel is being fumigated, the officer in charge of the fumigation inspects the life-boats for rats or rat signs. If any are found the chief officer is instructed to have metal covers made to fit the davit-lines similar to those used around the anchor-chains, and to have all holes in the covers repaired.

After the fumigation is completed, the captain or chief officer is given a blank form on which he is requested to note the number of dead rats found after his vessel has been cleaned, and return the form to the local quarantine office, he is also instructed to have all dead rats burned, unless collected for examination. The officer in charge of the fumigation completes a form relative to the fumigation which is filed at the office for the information of the medical officer in charge of the station, and as a record in the event of an accident occurring during the fumigation.

At the close of each week a report of the vessels fumigated, their port of departure, cargo, method of fumigation and the number of dead rats reported, is forwarded to the bureau, and the cards are then filed in an alphabetical order.

NOTES

The equipment for a vessel engaged in fumigating with flue-gas should include a pulmotor and an oxygen helmet; also an Orsat apparatus for testing the carbon monoxid content of the gas. The use of live rats, from time to time, as a control in the work is also greatly recommended.

The length of time necessary to complete a vessel depends on size, construction, means of ventilation and time necessary to make and change connections. The average is about three hours for a loaded freight-vessel, and about two hours for the usual size fruit-boat when unloaded.

If it is intended to begin unloading immediately after the fumigation, attention is first given to the holds. The gas will penetrate easily and kill all rats in a compartment, and as it is unlikely that a rat will come on deck during the day, it is safe to finish one part of a vessel and allow it to be opened for the escape of the gas while another is fumigated. When two connecting holds are separated by a wooden bulkhead, it is better to do each compartment separately, rather than allow the gas to diffuse through the bulkhead. If there are small compartments in a vessel not connected with one which is being fumigated, a careful search is made, and if there is no possibility of a rat being harbored therein, this compartment may be exempted from fumigation.

NOTE: Since the preceding article was written the quarantine steamer *Neptune* has been equipped with a Schutte and Koerting type of the Harker fumigating apparatus capable of delivering three thousand cubic feet of flue gas per minute, which reduces considerably the time required for fumigating a vessel. Vessels requiring fumigation are now treated at quarantine before being allowed to dock.

BASIC FUCHSIN IN SURGERY

ITS WIDE RANGE OF USEFULNESS

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In the work of treating the employees of a rapid-transit system employing almost 15,000 men, perhaps the commonest chronic condition we have to deal with, and also one of the most unsatisfactory, is ulcer of the leg.

It is so common among surface-car motormen that it has come to be known as "motorman's leg."

In considering the etiology of this condition, after excluding constitutional conditions and trauma, one is struck by the fact that motormen are very prone to it, while the conductors are comparatively free.

Of course the explanation is simple. The average motorman is obliged to stand in one spot for hours at a time, and the only rest he obtains is by transferring his weight from one foot to the other from time to time. Thus he does not have the stimulation to venous return of circulation in the leg caused by muscular action — which is obtained by the comparatively small amount of walking done by his mate, the conductor.

The average motorman who has been in the service for five years or more is liable to be found to have one or more of the following conditions, in their order of frequency: (1) varicose veins, (2) ulcer of leg, (3) flat-foot, (4) hemorrhoids, (5) varicocele. These all are due to the same cause, prolonged standing with no walking. The rarity of these conditions in conductors is remarkable. Therefore, having run the gamut of treatments and dressings for chronic leg-ulcer without having found any one application uniformly successful, I was deeply interested in the article by May and Heidingsfeld[1] on the use of basic fuchsin in that condition. I had remarked that almost every application used by me in these cases of ulcer had tended to irritate the surrounding skin and produce a dermatitis. The statements of May and Heidingsfeld that fuchsin preparations (*a*) were absolutely non-irritant, (*b*) were proved to be non-toxic, (*c*) did not coagulate albumin, and (*d*) encouraged epithelial and granulation growth, at once influenced me to follow their suggestions.

I noted that the cases described were hospital cases and therefore probably in patients confined to bed. None of the patients whose cases I deal with in this article were confined either to bed or to the house, and most of them were doing their usual work on the cars. This was a much more severe test of the fuchsin treatment. I heeded the warning given in the article against the use of commercial fuchsin, and insisted on obtaining Grübler's Fuchsin für Bakterien. The formula used was:

Fuchsin	1
Petrolatum	5
Lanolin q. s. ad	100

This makes a fine smooth paste which does not melt and run away or soak through the dressing. From the first application, not only have I seen no irritant effect, but on the contrary the action of the dye seems to be a remarkably sedative one.

Of thirty cases of leg-ulcer between June 1 and December 15, only one has failed to respond, and in this case repeated trauma, and an alcoholic habituation must be taken into consideration. Having obtained such uniformly gratifying results in these chronic leg-ulcers, I was prompted to extend its use to burns, abrasions, denuded matrices of evulsed nails, ingrowing toe-nail operations, granulating wounds following suppuration and incision — in short, to all conditions in which there was ulceration or loss of epithelial covering. In burns the results have been little short of marvelous, especially in electric burns, which are notoriously hard to heal. Not only does its use in second- and third-degree burns prevent suppuration and encourage epithelial growth, but the soothing effect of its application is very gratifying to the patient.

I have compiled a short synopsis of the number of cases of each condition treated between June 1 and Dec. 15, 1913:

Varicose ulcer of leg	30
Burns	17
Evulsed nail	15
Granulating wounds, mostly infected, base of carbuncle, etc.	14
Ingrowing toe-nail operations	10
Sloughing of sutured wounds	6
Total	92

The results have been invariably good with the one exception mentioned above.

The only objection to the treatment is the bright red color of the dye, and the difficulty of removing its stain from the hands and clothing. This is a minor matter, however, as alcohol will effectually remove the stain from the skin even after many days, and the clothing can be protected by a little care in applying the dressing and bandages.

My only reason for not using it as a moist dressing for wounds, as May did, is that I have been obtaining exceedingly satisfactory results from the use of tincture of iodin and dry dressings.

I wish to urge the extensive use of fuchsin not only in chronic ulcers but also in burns, abrasions and in all cases in which epithelial covering is wanting. It seems to fill a long-felt want in such cases.

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1. May, Eugene S., and Heidingsfeld, M. L.: Basic Fuchsin in Chronic Leg Ulcer, THE JOURNAL A. M. A., May 31, 1913, p. 1680.

SIGNIFICANCE OF ELEVATED BLOOD-PRESSURE IN PREGNANCY

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The wide-spread interest in the sphygmomanometer, and its almost universal employment, have developed a wealth of clinical data bearing on the blood-pressure in a large variety of conditions. On the whole, this information is enlightening, and in many instances materially assists in the solution of clinical problems. Among the specialists, the obstetrician has learned to place great dependence on the guiding finger of the sphygmomanometer. Possibly by accepting too literally the conclusions of the pioneer writers, that continued high pressure calls for surgical interference, he may be led into error through lack of careful study and observation, and a failure to estimate the true value of the blood-pressure findings.

The one point which does not seem to have been clearly brought out is the relative danger of the high pressure of varying origin which may occur during pregnancy. Just as there are many persons who for a

long time have moderate degrees of chronic kidney involvement, associated with little or no discomfort and few definite signs of serious disease in spite of the high pressure maintained, so also one may find women, who, during the course of their pregnancy, show a sustained high pressure with transitory or absent concomitant phenomena, and at no time present the picture of even a mild toxemic state. These most certainly, should be separated from the pregnant cases showing even a moderately elevated blood-pressure accompanied by some or all of the familiar signs of the toxemia of pregnancy.

While the first group may need special watching and careful management, they should by no means be looked on as subjects for surgical interference. This fact emphasizes the great importance of careful general clinical observation in addition to blood-pressure studies. In this connection the urine will often, but not always, serve as a valuable guide. (The value of urinalysis in doubtful cases is greatly increased when the total twenty-four-hour excretion is collected for examination.)

In the toxemia cases, the gradually rising pressure, the persistent nausea, the head pains and the characteristic urinary findings (diminished quantity with increasing amounts of albumin, casts and blood-cells), all point to an acute and progressive condition.

When it comes to a decision we may be further aided, if we can obtain evidence through the history of a previously existing kidney involvement sufficient to account for the fairly well-sustained high blood-pressure found on successive observations. Moderately elevated pressure may persist throughout a pregnancy while the urine continues to be large in volume, of low specific gravity, without albumin entirely, or with only minute quantities and often an entire absence of formed pathologic elements.

The following abstracts taken from case records are examples of the two types of high pressure above referred to.

CASE 1.—Mrs. W. T., aged 37, undecimpara, was first seen Sept. 17, 1913. The last period was early in June. In the latter part of July moderate nausea and vomiting occurred, but no edema or other special symptoms referable to her condition. The bowels were constipated but were opened daily by enemas. The pulse was 88, and the blood-pressure 180 mm. Hg. At this time the patient was given a pill for constipation and directions in regard to diet, personal hygiene and habits, etc.

September 22, patient was much relieved of gastric disturbances. Pulse was 100 and blood-pressure 170 mm. Hg.

September 6, pulse was 100 and blood-pressure 170.

September 30, pulse was 90 and blood-pressure 160. Careful questioning developed the fact that following a plastic operation several years ago, unconsciousness lasted several days with total anuria, which was followed by evident signs of an active kidney lesion, for which she had been treated.

The urine on two occasions (in September, 1913) showed specific gravity from 1.010 to 1.018 with a trace of albumin, no casts, blood-cells or pus, but an occasional cylindroid and a few shreds of mucus. Subsequent observations warrant the assumption that the high pressure occurring in this case is due to an old kidney lesion and is not the result of a toxemic state and therefore does not demand evacuation of the uterus.

CASE 2.—Mrs. C. B., aged 22, primipara (time calculated to March 30, 1912), represents a fair type of a moderate degree of a toxemia of pregnancy. The patient was first seen Feb. 5, 1912, when she complained of very edematous ankles, nausea and vomiting, dizziness and headaches. Examination showed blood-pressure to be 180, with a large amount of albumin in urine. Three weeks' active treatment, including rest, sweat-baths and other eliminative measures failed to better the condition. During this time the pressure ranged from between 170 and 185, dropping once to 150.

March 7, over 50 per cent. of albumin was shown by Esbach; other conditions were about the same.

Labor was induced March 9, and delivery occurred the following day, after which the blood-pressure promptly fell to 125 mm. Hg. On April 3, the blood-pressure was 120 and there was no albumin in the urine.

Patient presented herself again on Oct. 14, 1912, when she was six weeks pregnant. At this time she showed some edema of the ankles, but had no other complaints. Examination of urine showed low specific gravity, but no albumin or other pathologic elements. This patient was carefully watched till the time of her delivery, June 3, 1913. Throughout this pregnancy the blood-pressure ranged between 110 and 125, the average pressure being about 120; the urine at no time contained more than a trace of albumin and never showed any other abnormal characteristics. Delivery and subsequent history up to the present time are entirely uneventful.

It is interesting to note in this case that the toxemia which occurred during the latter part of the first pregnancy did not occur in the second, and that the little time elapsing between the two pregnancies did not permit of much recuperation. Yet in spite of this, it is plainly evident that there did not result any permanent kidney damage, which is shown by the fact that in the second gestation the blood-pressure and the urinary and other findings remained normal.

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EXPERIENCES WITH NOGUCHI'S LUETIN TEST FOR SYPHILIS

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For the past eight months I have been using luetin, as prepared by Noguchi, in selected cases in the Southern Pacific Hospital of Houston. I have been struck with its value in this class of cases, and in this kind of work, in which it is necessary to test numbers of men, and to do it with more or less rapidity.

The specificity of the test has impressed me as being decidedly valuable in the late cases of syphilis.

The technic has been carried out as recommended by Noguchi: 0.07 c.c. of a mixture of equal parts of luetin and sterile normal salt solution, injected intradermically.

I have noted several anomalous reactions, which I shall describe briefly before taking up the series in more detail.

I have noted one of the so-called delayed reactions; that is, the site of injection appeared quite normal after forty-eight hours, and remained so for ten days, when there appeared a marked pustular reaction (Case 19). In one case a typical severe reaction appeared thirty-six hours after the injection, being typical, however, in every respect, and ran a regular course. This was a case, also, in which the Wassermann reaction was negative at the time; the patient had had a thorough treatment for syphilis, which had been contracted two and one-half years previously (Case 12).

I have noted two negative reactions in cases which were clinically tertiary lues. One patient was suffering from luetic iritis, and from a periostitis. He had a definite history of syphilis, incurred eighteen months previously, with practically no subsequent treatment.

The first test remained quite negative for twelve days. On the sixth day after luetin was given, vigorous antisyphilitic treatment was instituted (mercury inunctions to physiologic limit plus large doses of potassium iodid), with immediate improvement of all symptoms. On the twelfth day, a second injection of luetin was given, followed in forty-eight hours by a typical papular eruption, which later became pustular. Almost coincidentally with this reaction (twelve hours later), there occurred a similar reaction of about the same degree of severity at the site of the old injection, which had been made twelve days previously (Case 1). The other negative case was that of a man whose palate, soft and hard, was eroded, and who had an old urethrorectal fistula. There was a definite history of lues, practically untreated. The luetin reaction was negative. A second test, tried ten days later, was positive, not becoming pustular, however. The patient had been placed on antisyphilitic treatment on admission to the hospital, and was taking large doses of mercury and potassium iodid during the period elapsing between these tests (Case 3).

There were three positive reactions in patients who showed no definite clinical symptoms of syphilis, and who gave no history. Two of these were negroes who had been injured in accidents. Both gave a definite positive reaction. The other was a Mexican with chronic arthritis. All three denied lues, but owing to the races, and the social status of the patients, the negative history is to be doubted. The other twenty-two control cases, including typhoid, pneumonia, acute articular rheumatism, influenza, nephritis, malaria and endocarditis, were negative except one case of aortic and mitral insufficiency, with extensive arteriosclerosis, which showed a definite pustular reaction (Case 45), and one case of mitral regurgitation, and probably dilatation of the aorta, which showed a positive pustular reaction (Case 46). The last two were both elderly white laborers who were low in the social scale; both improved considerably under specific treatment, and should probably be considered as syphilitics, clinically, even without laboratory assistance.

There were no severe constitutional reactions from any of the tests, although a few patients complained of feeling ill, with slight headache and loss of appetite for about twenty-four hours.

In interpreting the following reactions, I have considered as positive only those which were definitely positive, that is, in which there was at least a distinct, indurated, red, papule, persisting for at least four days after the injection. All doubtful reactions were considered negative. Most of the reactions were pustular. In the following reports, papular reactions are denoted by + and pustular reactions by + +. Negative reactions are denoted by —.

REPORTS OF CASES

CASE 1.—H. Iritis, periostitis, gumma of liver, history of chancre, followed by secondaries, eighteen months previously; practically no treatment. Luetin —.

CASE 2.—H. (Same patient as Case 1) twelve days later; immensely improved after forcing mercury and potassium iodid. Luetin + +.

CASE 3.—Eroded palate, urethrorectal fistula, history of syphilis ten years ago. Luetin —.

CASE 4.—Same patient as Case 3, ten days later. Luetin +.

CASE 5.—Castro, Mexican, otitis media chronica. Wassermann positive. Luetin +.

CASE 6.—P. Cerebral lues. History of syphilis. Luetin +.

CASE 7.—M. General paresis. Luetin + +.

CASE 8.—S. Chancre, followed by secondaries three years ago. Thorough treatment (several courses of mercury [thorough], followed by two treatments with salvarsan). Healthy wife and baby. Wassermann negative several times. Luetin —.

CASE 9.—B. Syphilis, primary and secondary, four years ago, followed by mercury for two years. Healthy wife and baby. Wassermann negative several times. Never had salvarsan. Luetin + +.

CASE 10.—D. Syphilis, primary and secondary, two years ago. Thorough treatment with mercury. Salvarsan three times. Wassermann negative. Luetin —.

CASE 11.—S. Syphilis, primary and secondary one year ago. Salvarsan twice. Mercury constantly. Wassermann negative. Luetin + +.

CASE 12.—B. Syphilis, primary and secondary, two and a half years ago. Salvarsan twice. Two courses of mercury of several months' duration each. Wassermann negative. Luetin + +.

CASE 13.—S. General paresis. History of syphilis twenty years ago. Luetin +.

CASE 14.—J. Syphilis, primary and secondary, one year ago. Salvarsan once. No mercury. Suffering from periostitis. Luetin + +.

CASE 15.—C. Sciatica. History of syphilis four years ago. Patient took mercury for few months only. Luetin +.

CASE 16.—L. Argyll Robertson pupil, absent knee-jerks, mental aberration, no history of syphilis, Wassermann negative. Luetin +.

CASE 17.—F. Syphilis, secondaries. Wassermann positive. Luetin —.

CASE 18.—A. Syphilis secondaries. Luetin —.

CASE 19.—H. Chancre hard. Luetin —.

CASE 20.—P. Syphilis twenty years ago, followed by thorough treatment with mercury; patient has taken mercury off and on for past twenty years. Salvarsan twice. Wassermann negative. Luetin —.

CASE 21.—H. Alopecia, loss of eyebrows. No history of syphilis. Wassermann positive before treatment. Salvarsan twice. Thorough course of mercury for two months. Luetin —.

CASE 22.—S. Syphilis eight months ago, primary and secondary. Salvarsan once, mercury constantly. Luetin + +.

CONTROL TESTS

CASE 23.—W., negro. Injury to foot, amputation of toe. Luetin —.

CASE 24.—R., Mexican. Pulmonary tuberculosis. Luetin —.

CASE 25.—B. Pleurisy, myocarditis. Luetin.—.

CASE 26.—M. Typhoid. Luetin —.

CASE 27.—T. Acute gastritis. Luetin —.

CASE 28.—M., negro. Nephritis. Luetin —.

CASE 29.—H., negro, aged 30. Injury to back. Patient denies lues. Wife had miscarriage at seven months. Luetin +.

CASE 30.—M., Mexican. Amputation of foot. Luetin —.

CASE 31.—W. Bronchitis. Luetin —.

CASE 32.—R., negro, aged 40. Fracture of arm. Patient denies lues. Scars of old ulcers on shins. General enlargement of lymph-nodes. Luetin +.

CASE 33.—C., Mexican. Carcinoma ventriculi. Luetin—.

CASE 34.—I. Influenza. Luetin —.

CASE 35.—Mexican laborer, aged 28. Chronic multiple arthritis. Patient denies lues. Luetin +.

CASE 36.—L. Mitral stenosis. Luetin —.

CASE 37.—Mexican. Malaria. Luetin —.

CASE 38.—P., Mexican. Typhoid. Luetin —.

CASE 39.—H. Acute gonorrhea. Luetin —.

CASE 40.—S., Mexican. Amputation following accident. Luetin —.

CASE 41.—Negro. Gonorrheal rheumatism (acute). Luetin —.

CASE 42.—E., negro. Pneumonia. Luetin—.

CASE 43.—C. Acute articular rheumatism. Luetin—.

CASE 44.—Nephritis. Luetin—.

CASE 45.—Mc., aged 48. Mitral insufficiency, dilatation of aorta. Denies lues. Luetin + +.

CASE 46.—W., white, laborer, aged 54. Mitral and aortic regurgitation, arteriosclerosis (generalized). Patient denies lues. Luetin + +.

CASE 47.—S., negro. Sprained back. Luetin —.

CASE 48.—S. Unexplained attacks of periodic vomiting. Luetin —.

CONCLUSION

My feeling, after this limited experience, is that this is distinctly a valuable test, and that when it is positive we are dealing with syphilis. It has been of service to me in several cases in which syphilis would probably not otherwise have been suspected, and in which it was confirmed by either the Wassermann reaction or by the therapeutic test.

I wish to thank Dr. Noguchi of the Rockefeller Institute for his kindness in furnishing the luetin which was used in these tests, and Dr. R. W. Knox, chief surgeon of the Southern Pacific Lines, for permission to carry out and publish this work. I also wish to thank Dr. H. C. Moore of Houston for furnishing me with a few very interesting cases from among his own patients.

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HEMORRHAGIC HYPERNEPHRITIS

WITH REPORT OF CASE

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No excuse is offered for this case-report other than that it is an unusually distinct picture and an uncommon condition. Munson, quoting Arnaud, states that adrenal hemorrhage is found in 1 per cent. of cases. I agree with Munson that this figure is high. In 652 necropsies performed in the United States Army General Hospital for Tuberculosis, with examinations of all organs, but one case has been recorded. The subject is not so well treated in medical literature as other conditions equally uncommon. A majority of the text-books do not speak of the condition and many only mention it. Very few so treat the subject that one could reasonably be expected to recognize it clinically.

The etiology is unknown. Microscopically, fatty degeneration is marked (Adami). In my experience, typical fatty degeneration in the adrenal with atrophy of the cell nuclei is very uncommon, especially in the cortical portion. Fatty infiltration is apparently not so rare. I have noticed that when fatty degeneration or infiltration is present in the adrenal, the fibrous tissue of the pancreas is usually increased and the islands of Langerhans are apparently enlarged. Whether this is a coincident or an etiologic relationship I am not prepared to state. Infection, trauma, thrombosis, etc., have been advanced as etiologic factors. None of them, however, are thoroughly satisfactory.

The symptoms are not well defined as a rule. Rolleston gives the most characteristic symptoms as "sudden onset with fever, violent pain in the hypochondrium radiating to the loins, convulsions, vomiting, diarrhea, and later tympantes, collapse and death within forty-eight hours from the onset." Karakascheff emphasizes asthenia and intestinal irritation (Doch). The following case may assist in defining the symptom complex:

History.—C. L. R., white, man, aged 43, sergeant, who had served in the army seventeen and one-half years, entered the hospital Nov. 22, 1911. The family history was negative. The patient had had dysentery in 1909, and malaria in 1908. In July, 1898, the left ear began, without pain, to discharge pus, and had discharged off and on ever since. Patient had had growths in both sides of scrotum ever since he could remember. The present illness began in April, 1909. Patient was hoarse, had slight expectoration and cough. In April, 1911, he contracted a heavy cold, and the hoarseness, expectoration and cough became worse. He had gradually lost 50 pounds since April, 1909. His best weight was 220 pounds, in 1896. Sputum was positive for tubercle bacilli in October, 1911.

Examination.—On admission the patient's temperature was 98.8, pulse 84, weight 149 pounds, cough and expectoration moderate. Expectoration was mucopurulent. There were numerous tubercle bacilli; digestion was unimpaired. Blood and urine were normal. The patient was deaf in the left ear. There was a large perforation in the posterior inferior quadrant. Examination of larynx showed infiltration and ulceration of posterior commissure. Lungs showed signs of healed tuberculous infiltration in the upper part of both superior lobes. There was a slightly active tuberculous infiltration at the summit of both inferior lobes. The abdomen was normal. Both testicles were malformed—lobulated. There was a right inguinal, indirect, incomplete, reducible hernia, which had developed gradually during the past two years as a result of coughing.

Treatment and Course.—Under routine treatment the patient became free from clinical tuberculous activity in March, 1912. Tubercle bacilli were present in sputum. The weight was 160 pounds. Patient's condition remained the same until discharged on surgeon's certificate of disability in October, 1912. Tubercle bacilli were present in sputum. The weight was 176 pounds. The general condition was favorable. The result was noted as improvement.

Second Admission.—After leaving Fort Bayard the patient went to Pennsylvania where he remained for seven months, doing no work. Appetite and digestion became impaired, resulting in the loss of 31 pounds in weight. Cough and expectoration increased. On readmission, May 14, 1913, temperature was 98.2, pulse 96, weight 145 pounds. Patient complained of anorexia and of griping pains in lower abdomen, especially after breakfast; had had a diarrhea the past two months. An active tuberculous infiltration was found in the greater part of both superior lobes and at the summits of both inferior lobes. There was a cavity at the right apex posteriorly. This condition of the lungs was complicated by tuberculous otitis media, left; tuberculous laryngitis, and tuberculous enterocolitis. Blood and urine were normal.

June 14, 1913: General condition of patient was unimproved. He was much weaker and had lost 10 pounds in weight. Temperature was from 99 to 100. Patient continued to have griping pain and constant diarrhea. Lungs showed fewer râles.

July 14: General condition was unchanged from last report. Diarrhea continued from four to five movements daily. Diagnosis and complications remained unchanged.

August 15: This morning patient developed an attack of sudden pain in the upper right abdomen localizing at the angle of the right costal arch. Pain radiated to angle of right scapula and to point of right shoulder. Abdominal muscles were rigid. Temperature, morning, was 98.8; evening, 100. Pulse was 96, full and hard. Diarrhea was uncontrolled. Urine was normal. Nothing pathologic was found in fecal analysis.

August 19: Patient was apparently improving. Abdominal pain was becoming less though still there was a painful point at angle of right costal arch. Pressure caused pain to radiate to point of right shoulder and to angle of right scapula. Morning temperature was 98; evening temperature, 99.2; pulse 84, high tension.

August 20: Just after breakfast patient suffered an attack of acute pain in the upper left abdomen localizing at angle of left costal arch, but radiating to point of left shoulder and

angle of left scapula on pressure. Pain was not so severe as on the 15th. Morning temperature was 98; evening temperature, 99.6; pulse 96, high tension. There was occasional vomiting of watery fluid containing bile. Diarrhea was increased.

August 21: The condition was apparently unchanged from that of the 20th. Morning temperature was 97.6; evening temperature, 99.8.

August 22: While the nurse was out of the ward the patient arose and went to the water-closet about 20 feet away, fainted and fell to the floor. The nurse stated that the patient was entirely unconscious, but had a very hard pulse; breathing was shallow. The patient was put into bed and given 15 c.c. of whisky, after which he revived and complained of severe abdominal pains radiating to his shoulders. The medical officer was summoned, but the patient developed a severe convulsion and died at 8:55 a. m., about twenty minutes after fainting and before the medical officer arrived.

The clinical diagnosis was chronic pulmonary tuberculosis and tuberculous enterocolitis. Hemorrhage or perforation of duodenal ulcer was suspected as the cause of death.

Necropsy.—This was held at 1:30 p. m., Aug. 22, 1913. The body was that of a dark, emaciated white man, aged 45. Abdominal walls were retracted and rigid. Rigor mortis was absent from the extremities and neck; body heat was present.

Tuberculous infiltrations were found in the upper parts of all the lobes of the right lung and of the entire left lung.

The heart and pericardium were apparently normal.

No definite pathologic condition other than passive congestion could be demonstrated in the liver macroscopically.

Evidence of beginning intestitial nephritis was found in the kidneys.

The spleen showed passive congestion.

The pancreas was slightly fibrous.

Adrenals: The right adrenal is enlarged and situated in a blood-clot about the size of a hen's egg. The clot appears to be composed of two parts: an older portion which is almost black and a younger portion which is bright red and apparently of recent origin. The surface of the gland and the hematoma are free from evidence of tubercles. In some parts of the cut surface of the gland it appears as though there had been hemorrhage within the gland substance. No definite macroscopic change can be demonstrated within the gland.

The left adrenal is within a blood-clot as large as a fist. The greater portion of the clot is above the gland, while in the right the gland is almost within the center of the clot. The clot about the left gland does not appear to be made up of two portions, a younger and an older, as is the clot about the right. This hematoma on the left side is apparently very recent in origin. The clot is sufficiently large to incorporate the semilunar ganglia; the ganglion, however, cannot be definitely identified. The margin of the hemorrhage extends to the celiac axis. The sectioned mass shows the gland to be apparently free from disease or hemorrhage.

Intestines: The small intestines and stomach are apparently free from pathologic change other than a slight reddening and thickening of the mucosa of the stomach and duodenum. The large intestines contain several large tuberculous ulcers. The ulcers have bright red, indurated, raised edges. A few tubercles are discernible in the bottom of the ulcers.

Microscopic Findings: Adrenals: The left adrenal shows a diffused and general fatty degeneration. Within and about the glands are numerous evidences of hemorrhage. There are more evidences of hemorrhage externally than internally. Very few cells can be recognized as gland-cells. The degeneration has apparently been very rapid and of equal extent throughout the organ. The same condition as in the gland proper is present in the small clumps of adrenal tissue seen about the periphery of the glands. The medullary and cortical portions are equally involved. The degeneration however, is more advanced in the medullary portion, judging from the fact that the few remaining cortical cells stain more distinctly than those of the medullary portion. There is no evidence of tubercles in the adrenals. The right adrenal shows the same pathologic condition as the left. The hemorrhage is more distinct within this gland than within the left.

Pancreas: The interstitial tissue is increased. The islands of Langerhans are unusually large. The blood-vessel walls are thickened, as are the walls of the ducts.

Pathologic Diagnosis: The cause of death was hemorrhagic hypernephritis. Associate causes of death were fatty degeneration of adrenals, and chronic pulmonary tuberculosis.

Munson states that a positive clinical diagnosis can be made only when the glands are sufficiently enlarged to be recognized by palpation. While this is to be borne in mind, the majority of patients will be so exquisitely tender that palpation cannot be performed thoroughly enough to demonstrate enlarged glands. Theoretically, the blood-pressure should be very low — at least shortly after the hemorrhage. It is possible that the pressure might be raised immediately after the hemorrhage, as the absorptive surface would be suddenly increased. This should not last long, as the gland would certainly be traumatized so as to reduce its secretion, and pressure would fall through the lack of normal secretion.

Apparently the cardinal symptoms are profuse watery diarrhea, pain localizing at angle of costal arch and radiating, especially on pressure, to the shoulders and loins, and symptoms of collapse with a high blood-pressure.

From a theoretical point of view the treatment should be absolute rest, light diet and adrenal extract. Diffusible stimulants which dilate the vascular system are to be avoided.

In conclusion, I will state that Sergeant R.'s diarrhea may have been due to tuberculosis; but one who has attended necropsies on tuberculous subjects for any length of time always wonders why diarrhea is not a constant symptom of tuberculous colitis, enteritis or enterocolitis. In less than 30 per cent. of our cases of tuberculous bowel disease coming to necropsy was there a history of diarrhea. There is apparently but little relationship between the diarrhea and the extent of a tuberculous condition present in the intestine. It may be that adrenal changes are a factor in tuberculous enteritis, colitis or enterocolitis.

DETECTION OF MERCURY IN THE EXCRETIONS *

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The identification of mercury in the urine, stomach-contents or feces of persons supposed to be suffering from poisoning by this metal is often a matter of great diagnostic importance, and is of especial significance owing to the fact that if the proper eliminative treatment is begun without delay the patients' lives can be saved in a considerable proportion of the cases. The newspaper notoriety given to recent cases of poisoning with mercuric chlorid, the ease with which the substance may be obtained, and the mistaken but prevalent idea that the death caused is rapid and without discomfort, have procured for this agent a wide vogue among those attempting suicide; while its popularity as a household antiseptic causes accidental poisonings to occur with considerable frequency. The history to be obtained from such patients or their friends, however,

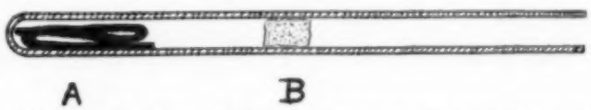
* From the Pathological Laboratory of St. Luke's Hospital, New York. Dr. F. C. Wood, Director.

is often extremely unsatisfactory, and there is nearly always room for doubt whether or not the poison has actually been taken, and if so, whether the amount is large or small. Most of the cases of accidental poisoning occur at night through the victim's having swallowed something from a bottle in the dark, and often there is merely the suspicion that what was ingested came out of the poison container and not from its innocent neighbor, so that the patient and his friends remain in a state of mind which is uncomfortable, to say the least. Would-be suicides, on the other hand, frequently deny the nature of the substance taken, and the only proof possible may be that of demonstrating the poison in the stomach-washings or in the urine or stools. As a result the occasions in which it is necessary to test for the presence of mercury in the excretions are not so very rare, but unfortunately most of the methods available for this purpose are far too complicated to be suitable for clinical application. In two cases of mercuric chlorid poisoning, one with suicidal intent, the other accidental, recently treated at St. Luke's Hospital, and in a third from outside, the following procedure, which is a combination of various steps from several older methods, was found to be very satisfactory in identifying the poison and following its elimination in stomach-contents, urine and feces.

In dealing with urine, about 150 c.c. is taken, and in order to break down the organic compound in which the mercury is likely to be present, it is acidulated with 5 c.c. of concentrated hydrochloric acid and evaporated over a free flame until its bulk has been reduced to 25 or 30 c.c. About 2 c.c. of hydrochloric acid is added to replace the loss by evaporation, and enough potassium chlorate to oxidize thoroughly the organic material present. This usually requires about 2 gm., and when it has been effected the fluid becomes pale yellow or colorless. It is then diluted to about 60 c.c. and is boiled vigorously until the chlorin gas previously evolved has been driven off, which is shown by the absence of chlorin odor from the steam. The solution usually darkens again on cooling. A piece of copper wire (about 18 gage) about 4 cm. in length, bent back on itself twice and cleansed by boiling a short time in a test-tube with dilute hydrochloric acid, is dropped into the solution and allowed to remain for an hour or more. If considerable amounts of mercury are present it will then be found to be coated with a silvery film of metallic mercury; but this is not sufficient to establish the identity of the metal, and if it exists only in traces the changes in the appearance of the wire may be inconclusive. The wire is accordingly removed from the dish with a glass rod, is washed with a little water and is gently dried by rolling it on a piece of filter-paper, pains being taken to avoid unnecessary handling and attrition. It is then allowed to slip to the bottom of a glass tube from 3 to 5 mm. in diameter and 15 cm. in length, which is sealed at one end, and is followed by a cylindrical plug of gold-leaf which is pushed into the tube until it is within 2 cm. of the wire. Such pellets of gold-leaf are used in filling teeth and are furnished by the dental supply-houses in the size required for the present purpose, so that when needed it is easy to obtain them from the nearest friendly dentist. The arrangement of the objects within the tube is shown in the accompanying sketch.

Holding the tube horizontally, the end containing the wire is gradually heated by brief successive introductions into the small flame of a Bunsen burner or spirit lamp, care being taken to avoid heating the part of the tube containing the gold-leaf. The latter must be examined frequently for any change of color, especially the end of the cylinder toward the wire. If mercury is present it will manifest itself by the appearance of a silvery patch of amalgam in this situation. If the amount of the metal is exceedingly minute there will be simply a pale discoloration of the gold, seen to better advantage with the hand-lens or by removing the pellet from the tube and examining it with the low power of the microscope; but if the amount is larger the deposit on the gold will be very easy to recognize.

If the pellet is too close to the wire the heat traveling along the tube may cause a deposit of mercury which at first was distinctly visible to become diffused so that it grows less evident. In doubtful cases the experiment should be repeated, using larger quantities of the material to be tested and allowing the wire to remain longer in the solution. If a positive result is obtained the tube may be sealed and kept as a permanent record. If further confirmation of the identity of the mercury is required, the gold-foil may be suspended in a tube containing a few crystals of iodin which are then very gently warmed. The mercury thus becomes converted into red mercuric iodid; or if the amount is considerable the metal may be distilled by heating the gold-foil in the tube and looking with the lens for a deposit of very minute droplets of metallic mercury in the cooler parts of the tube. Some idea of the amount of mercury present may be gained by weighing the gold before and after the formation of the amalgam.



Apparatus for the detection of mercury in the excretions; *A*, copper wire; *B*, pellet of gold-foil.

In testing stomach-contents or feces the same method is employed although the quantity of material taken is usually smaller. The material must be well mixed to insure getting a uniform sample of the specimen, especially in the case of stomach-contents if egg-albumin has been given as an antidote, as the mercury is then in the form of albuminate. The oxidation also takes longer, and larger quantities of potassium chlorate are required. Before the wire is placed in the solution, the latter should be filtered in order to remove any fatty substances, carbon or other insoluble materials.

Corrosive sublimate is readily reduced by organic matter to metallic mercury, and the latter, as well as mercuric chlorid, is volatile to a slight extent with steam, so that this must be kept in mind in evaporating or digesting solutions which may contain very minute amounts of the poison. The quantity of mercury which the copper is capable of abstracting from the fluid is a function not only of the concentration of the solution but also of the time of contact, so that if the test is negative after the wire has been immersed for one or two hours, another piece of wire should be dropped into the fluid and allowed to remain for a longer time, even over night.

In order to test the sensitiveness of the method the following experiments were done: A solution of mercuric chlorid was made containing 0.0001 gm. of mercury to the cubic centimeter, equaling 0.01 per cent.

or 1:10,000. Using this solution as a basis, successive dilutions showed that a definite positive reaction could be obtained when a solution containing 0.00002 gm. of mercury in the dilution of 1:1,000,000 was used, allowing the wire to remain in the solution three hours.

In order to make the controls more nearly resemble clinical conditions, experiments were made using three different specimens of albuminous urine, and two specimens each of stomach-contents and stools, to which definite amounts of the mercury solution were added, the mixture being allowed to stand over night before the tests were made. It was found that 1 mg. of mercury in 100 c.c., equaling a dilution of 1:100,000, could be detected in the urine, stomach-contents and stools, the wire being allowed to remain in the fluid two hours. In these cases the amount of amalgam formed on the gold was sufficiently large to be recognized with the unaided eye. Further control tests with materials to which no mercury was added gave negative results. The urine of twelve patients who had each received 2 grains of calomel the night before was also tested. In two of these a very faint positive reaction was obtained, showing the delicacy of the method, and also, that it is desirable before making a diagnosis of mercury poisoning to find out whether or not the patient has been given calomel.

The principle of securing deposition of the mercury on a metallic surface is made use of in many of the standard tests, such as the classical one of Reinsch and those described by Jolles,[1] Winternitz,[2] Almèn,[3] Brugnatelli,[4] Mergte,[5] Mauthner,[6] and Ludwig and Zillner.[7] All of these, however, involve complex manipulations or the use of reagents not always available, such as gilded platinum, powdered reduced copper, gold chlorid, etc. The formation of gold amalgam as a means of recognizing minute amounts of mercury also is not new, but it is believed that the technic suggested in the foregoing offers a simple, fairly rapid and exceedingly delicate method of testing for mercury which can easily be carried out by any physician.

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A CASE OF AMEBIC DYSENTERY OF THIRTEEN YEARS' DURATION CURED BY EMETIN HYDROCHLORID

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The case about to be reported seems sufficiently important to be placed on record because (although this is only the second case that I have recognized) the fact has been recently acknowledged that the disease is not extremely rare in this latitude, and because of the important discovery of the specific amebicidal action of emetin hydrochlorid which was announced by Rogers[8] last year. There is no longer any doubt that, either *in vitro* or *in vivo*, it kills amebas with the same certainty that quinin kills the *Plasmodium malariae*, or salvarsan the *Treponema pallidum;* and that to the very short list of undoubted "specifics" capable of destroying certain micro-organisms within the human body without material injury to the host, emetin may now be added.

1. Jolles: Monatschr. f. Chem., 1900, xxi, 352.
2. Winternitz: Arch. f. exper. Path. u. Pharmakol., 1889, xxv, 229.
3. Almèn: Jahresb. f. Tierchem. (Maly's), 1886, xvi, 221.
4. Brugnatelli: Riforma med., 1889, iv, 825.
5. Mergte: Jour. de pharm. et de chim., 1889, xix, 444.
6. Mauthner Quoted in Neuberg: Der Harn, Julius Springer, 1911, p. 181.
7. Ludwig and Zillner: Ztschr. f. anal. Chem., 1891, xxx, 258; Wien. klin. Wchnschr., 1889, ii, 857; 1890, iii, 354, 552, 572, 615.
8. Rogers: Brit. Med. Jour., June 22, 1912.

History.—The patient, a married woman, aged 70, consulted me Aug. 25, 1913, concerning constant and intractable diarrhea. The family history was uneventful. The patient had always been strong and healthy without illness of any consequence until thirteen years prior to the consultation, when the present trouble began. At that time, while in Tennessee, she had an attack of acute dysentery which, passing into a chronic diarrhea, has since been persistent. At times the discharge would be bloody and at others simply diarrheal. Throughout the thirteen years she had passed no formed stool.

During and following the acute illness she lost 30 pounds in weight but later regained much of it, and by extreme care in diet and extensive treatment had maintained a reasonable degree of health until some three or four years ago, when she again began to lose strength and weight. The heart was somewhat enlarged, the left border being 1 cm. to the outside of the midclavicular line. The blood-pressure was 140. The heart-sounds and rhythm were normal; there was no dyspnea, palpitation or edema.

The blood examination (which along with the other laboratory work was done by Dr. B. M. Edlavitch) showed hemoglobin 75 per cent., a leukocytosis of 17,600, polynuclears 61 per cent., small lymphocytes 20 per cent., large 10 per cent., transitional 1 per cent., eosinophils 7 per cent., basophils 1 per cent. Nothing was noteworthy in either physical examination or laboratory findings, beside the feces. These were semifluid, yellow, and contained mucus but no blood. Microscopic examination showed many amebas, which on the warm stage were found to be very actively motile. Meat-fibers and fats in the form of soaps and needle-shaped crystals were found in excess, probably due to the rapid transit of food debris through the bowel.

The patient entered Hope Hospital Sept. 8, 1913, for treatment. On that day Dr. M. F. Porter, Jr., who studied the case with me, gave her two-thirds grain of emetin hypodermically. Very mild nausea followed. September 9 she was given 1 grain. This was followed by increased nausea and very definite abdominal distress, which was unusual in her case. September 10 she was given 1 grain. Our stock of emetin then became exhausted and three days elapsed before the next injection was given. September 11 amebas were still present, but in greatly diminished numbers and nonmotile. Fifty-six hours after the third injection nausea increased in activity rather rapidly, several attacks of vomiting occurred and the patient was unable to take any solid food. Buttermilk was vomited shortly after it was taken. The abdominal distress which had continued was more severe at this time than earlier in the disease. September 13 no amebas were found, and 1 grain of emetin was administered, which was followed by distressing nausea and a largely increased number of liquid stools. A dozen stools were passed in the course of twenty-four hours. Nausea was still defined, abdominal distress troublesome and the patient suffering and greatly discouraged, except for the assurance that the cause of the chronic diarrhea had disappeared. No more emetin was given.

September 16 the patient had only three stools in twenty-four hours and of these the last was formed. The patient was very positive that this was the first formed stool which had passed in thirteen years, the stools having been constantly thin and watery during this time. The nausea and abdominal distress having disappeared, the patient was dismissed from the hospital. September 18 she was feeling perfectly well, except that normal appetite had not returned and solid food was repugnant to her. At this time the patient's condition was practically normal, about one formed stool daily being passed, and she was dismissed as presumably cured.

September 23, five days after dismissal, the patient returned with a recurrence of the diarrhea—six or eight loose, watery stools daily. Examination of the stools showed the presence of actively motile amebas. The cure had been only apparent, a sufficient number of the protozoa remaining to permit a complete recrudescence of the disease. She was not materially better than before the treatment.

The patient returned September 30 to resume treatment. She had considerable diarrhea and the stools contained amebas, although not so many as when treatment was first begun. On that date she was given two-thirds grain of emetin hydrochlorid hypodermically. October 1 and 2, she was given two-thirds grain; October 4 and 5, 1 grain. The injections were then omitted on the 6th and 7th. October 8, no amebas were found, but 1 grain of emetin was given. The patient returned October 13, having taken, according to directions, a saline laxative, as the amebas can be more certainly found in stools produced in this way. The stool contained no mucus and no amebas. On that day she was given an injection of 1⅓ grains emetin hydrochlorid. The patient was not seen again until October 17, when one or two formed, yellowish-brown stools, which contained no mucus and no amebas, were being passed daily. On this date an injection of 1 grain of emetin hydrochlorid was given. She visited the office again October 22 and 27, when the stools were examined and found to be perfectly normal in color and consistency and containing neither mucus nor amebas. The patient considered herself entirely well and was again dismissed as cured.

It is unnecessary to dwell on the fact that amebic dysentery is not so extremely rare in this latitude and should be constantly sought for even among patients who have not been south of the Ohio River. About a year and a half ago (April, 1912) a patient came under my observation (referred by Dr. Hackedorn of Antwerp, Ohio) who had never been south of the Ohio River. He had amebic dysentery in an advanced stage and died a few weeks after entering the hospital, in spite of everything that was known in the way of treatment at that time. This included, of course, ipecac, used as energetically as possible, carried past the stomach in specially prepared capsules. The necropsy showed the colon to be completely denuded of its mucosa over remarkably extensive areas, some of which were certainly 6 or 8 inches long.

The diagnosis is perfectly easy and should be made from stools obtained by a saline laxative, two or three stools being examined on the warm stage immediately after being voided. The presence of actively motile amebas, together with the symptoms of chronic intestinal irritation, should leave no doubt as to the proper diagnosis.

A differential diagnosis between the pathogenic and non-pathogenic amebas found in the intestines is not so easy from a study of morphology alone. The *Entamoeba coli* is the ordinary non-pathogenic form frequently found in healthy persons, its distinctive feature being that it multiplies from daughter-cysts contained within the body of the ameba, the daughter-cysts in this species being eight in number. The *Entamoeba tetragena* contains four instead of eight of these daughter-cysts and is pathogenic. The only other recognized pathogenic form is the *Entamoeba histolytica*, which multiplies by a budding process instead of by the development of daughter-cysts within the organism. Darling[2] in a recent communication maintains that this is a spurious form derived from the *Entamoeba tetragena*. Craig,[3] however, following Schaudinn, maintains the autonomy of *Entamoeba histolytica*. We need not worry about these controversies because the simple fact is that the occurrence of chronic diarrhea with any actively motile amebas present in the stool is sufficient to establish the diagnosis.

Several points seem worthy of comment. The occurrence of marked general abdominal distress, beginning on the second day of treatment and lasting several days, is probably to be referred to the specific action of the emetin on the myriads of amebas with which the intestinal wall was undoubtedly infiltrated. It was probably due to the liberation of endogenous toxins from the killed amebas, acting on the neurovascular mechanisms of the intestinal area. Another interesting feature was the rapid development of severe nausea and vomiting fifty-six hours after a dose (the third) of emetin. It is scarcely supposable that the nauseant and emetic action of the emetin, given hypodermically, could be delayed so long. Pharmacologists tell us that it is rapidly excreted by the gastro-intestinal, and to a less extent by the urinary tract. Here again, I believe the most plausible explanation to be the liberation of excessive quantities of endogenous toxins from killed amebas. It did not occur during the treatment of the relapse, when, it can be fairly assumed, there was only a fraction of the number of amebas present at the outset of treatment.

The tendency to recrudescence is well shown in this case, and we made a mistake in stopping treatment on September 13. Baermann and Heinemann[4] also emphasize this fact, and recommend after-treatment at intervals of three or four weeks, checked by examination of the stools for several months.

Blood examination made Nov. 21, 1913, showed leukocytes, 9,000; polymorphonuclears, 69; small lymphocytes, 28; large lymphocytes, 2; transitional, 1; eosinophils, none. Two important clinical facts are noted, first the disappearance of the leukocytosis, and second the complete disappearance of the eosinophilia, the latter being especially important.

2. Darling, Samuel J.: Budding and Other Forms in Trophozoites of Entamoeba Tetragena, Arch. Int. Med., May 15, 1913, p. 495.
3. Craig, Charles F.: The Relation of Parasite Amoebae to Disease, Am. Jour. Med. Sc., January, 1913, p. 83.

A CASE OF MERCURIC CHLORID POISONING DUE TO VAGINAL DOUCHES

FENWICK BEEKMAN, M.D., NEW YORK

Numerous cases have been reported of mercuric chlorid poisoning by absorption through the vaginal mucous membrane. Most of these have been the result of ignorance, as when a woman has inserted an "antiseptic" tablet into the vagina with a resultant gangrenous inflammation and absorption through the damaged tissue of the part. Other cases of poisoning have been due to douches given to women after childbirth, when absorption is facilitated by the relaxed and abraded tissues.

The case I report demonstrates that the normal vaginal mucous membrane also may in certain persons absorb enough corrosive sublimate from comparatively dilute solution to cause toxic symptoms.

REPORT OF CASE

History.—Mrs. B., aged 22, married six months, has always been healthy with the exception of the usual diseases of childhood. Her menstrual history has been normal; she has not become pregnant. Three weeks prior to examination the patient first noticed a swelling in the legs, though for a month previous she had been conscious of an increase in body size and slight headache had occurred. She consulted a physician who told her she had a chronic "Bright's" and that nothing could be done for her. On further questioning it was found that ever since her marriage she had been using vaginal douches four or five times a week to prevent conception. These consisted of a mercuric chlorid solution, from 1:1,000 to 1:2,000 in strength, made by placing a 7.3 grain tablet of corrosive sublimate in a quart douche-bag from one-half to three-quarters full of water.

Physical Examination.—Patient rather stout with a waxy pallor of skin and mucous membranes and marked anasarca of the entire body. Edema under eyes, which were very prominent and had a "popping-out" appearance. Thyroid not enlarged; no tremor. Heart signs negative; pulse 112, regular, without increased tension and showing no thickening of vessels. Lungs normal. Abdomen prominent with many striae on the skin; percussion note tympanitic over the anterior portion with shifting dulness in flanks; a wave of fluctuation present; edges of liver and spleen not palpable; vaginal examination negative; marked edema of the legs; temperature normal.

Urine (analysis of 1,000 c.c.) dark amber. Specific gravity of 1.004, reaction acid. Albumin 8 grams to the liter (Esbach). Many hyalin and granular casts and red blood-corpuscles.

Systolic blood-pressure 115 mm. of mercury. Blood: hemoglobin 80 per cent., white blood-cells 9,600.

4. Baermann and Heinemann: Abst. Am. Jour. Med. Sc. October, 1913.

With the cessation of the douches improvement set in rapidly, the urine output was easily raised to between 2,000 and 3,000 c.c. daily; the anasarca disappeared and the amount of albumin rapidly decreased. At no time did the systolic blood-pressure rise higher than 120 mm. of mercury. In five months she was discharged cured with no signs of her former illness and has since remained well for two years.

This case is of interest because it appears to be one of irritation of the kidney due to the absorption of mercuric chlorid through the vaginal mucous membrane. The amount of the drug absorbed each time must have been small but enough to keep up a constant irritation to the renal parenchyma, for as soon as the douches were discontinued improvement set in and continued until the lesions were apparently cured. Though the symptoms of intestinal irritation and stomatitis were absent, the case must be considered one of mercurial poisoning for the following reasons: The absence of any other factor which might have produced the nephritis, the rapid improvement and cure on cessation of the douches and the typical symptomatology of a toxic nephritis.

It is known that certain individuals are more susceptible to bichlorid of mercury than others, but even though this be so, it is hard to conceive that absorption could take place through the intact vaginal mucous membrane adequate to produce toxic symptoms. Of course where the drug is sufficiently concentrated to destroy tissue, absorption is thereby greatly increased and we may expect toxic symptoms, and as previously remarked in postpartum cases absorption is increased by the retention of the drug due to the relaxed condition of the birth-canal, lacerations and abrasions.

The conclusion, therefore, is that the indiscriminate use of corrosive sublimate as a vaginal douche may be dangerous at any time and this danger is increased if there be any condition present which would tend to increase retention and absorption of the drug.

55 East Sixty-Fifth Street.

DEFACED TYPE OF ADDISON'S DISEASE

Albert O. Holmes, M.D., Long Beach, Cal.

History.—The patient was a Civil War veteran aged 72, seen in consultation with Dr. B. M. J. Conlin of this city. The history up to two years ago had no bearing on the case. The present illness seemed to begin about two years ago with indefinite stomach trouble and indigestion. He had considerable sour stomach and intestinal upset, with attacks of diarrhea, and a very few attacks of vomiting. There was no history of vomiting blood or passing blood by the bowel. He became "run down" and unable to attend to business. For the last six months he has had a yellowish-looking skin and became progressively weaker. The last two weeks he has been confined to bed, during which time he has had chills and fever nearly every day.

Examination.—This showed a very emaciated man with a peculiar lemon-yellow pigmentation of the entire body so often seen in pernicious anemia and sometimes in cachectic conditions due to cancer. Examination of the lungs revealed dulness over the right lower lobe behind, with decreased breathing and fine moist rales, but was otherwise negative. The heart borders were normal, the rate regular, and 78 to the minute. The heart-sounds were very weak and distant, and no murmurs were heard. The abdomen was scaphoid and soft. The liver area was normal, the spleen not felt, the kidneys not palpable; no tumors or enlarged lymph-nodes were discovered. The temperature was 102.2 F. although the heart-rate was only 78, the pulse being of good quality and well sustained. Blood-pressure was 110. Urine examination was negative for albumin, casts, sugar and bile pigments. Blood examination showed: red cells, 1,210,000; white cells, 4,088; hemoglobin, 45 per cent.; color-index, 1.8. The red cells showed marked anisocytosis and poikilocytosis. There were many megalocytes, the average size of cells being above normal. No blast-cells were found, but there were considerable polychromatophilic changes and basophilic granulation. No differential white count was made, but the slides showed a definite relative lymphocytosis. There were no malarial parasites present. A blood examination eight days later showed: red cells, 1,250,000; white cells, 2,482, with same changes as noted above; no blast-cells.

As the patient was very weak and a passage of the stomach-tube was objected to, no gastric analysis was made.

The diagnosis seemed to be one of two things. The color of the skin and the blood-findings strongly suggested pernicious anemia; but the history and the physical findings other than the blood did not bear it out. The history and emaciated appearance of the patient pointed toward cancer of the stomach with a severe secondary anemia. The fact that no tumor could be felt in such an emaciated man clouded the diagnosis of cancer. Addison's disease was not thought of.

During ten days the patient was under observation he had an intermittent temperature ranging from 102 F. to below normal. During the fall of fever he would have drenching sweats. He became progressively weaker and died in coma.

Necropsy.—This was performed thirteen hours after death but the body had been injected with embalming-fluid. In brief the necropsy disclosed the following: The peritoneal cavity was normal and contained no fluid. Pleural cavities contained no fluid; a few adhesions were found at the left apex and many adhesions at the right lower lobe. Pericardial cavity was normal. Heart-muscle was of normal thickness and color; there was some sclerosis of the mitral and aortic valves, but both were competent. The aorta and coronary arteries were slightly sclerosed. The left lung was normal except for a few scars at the apex. There were no tubercles. The lower lobe of the right lung was congested and streamed with bloody, slightly frothy serum on section. The liver and spleen were normal. The kidneys were slightly below normal size and showed some sclerotic changes; the capsules stripped readily; there were no cysts. The left kidney was lobulated. The stomach and intestines were normal. There was no tuberculosis of the mesenteric or retroperitoneal lymph-nodes. The left adrenal was small and adherent and reduced to a caseous cyst. The right adrenal small and caseous in the medullary portion, with a shell of recognizable adrenal cortical tissue. Under the microscope the changes were shown to be tuberculous, with complete destruction of the left gland and partial destruction of the right gland, which contained some apparently normal tissue. The only tuberculous lesions found outside the adrenals was a slight puckering and slight calcareous infiltration at the apex of the left lung.

Such defaced types seem impossible of diagnosis except at necropsy. The most interesting points were the light yellow, pernicious anemia-like pigmentation, and the marked anemia of primary type. The blood-pressure also was not markedly low, and is probably to be explained by the hypothesis that other chromaffin cells of the so-called chromaffin system supplied part of the necessary pressor substance which we designate as epinephrin.

6 Moody Building.

Empyema with Calcareous Pleura.—The patient, an Armenian woman aged 52, a resident of Cesarea, had been treated for the past six or eight months for pleurisy. When I first saw her she was suffering from cough and fever, the temperature being 101.4. Examination of the chest revealed a dulness posteriorly on the right side at the base of the pleural cavity. Exploratory puncture disclosed a quantity of pus. The patient was taken to the hospital and resection of rib performed. About 10 ounces of pus were evacuated, after which digital examination of the pleura showed it to be absolutely fixed, immovable and of stony hardness. Several pieces of this stony plate were broken off at the most dependent part and rubber-tube drainage established. The broken fragments show a deposit about ⅛ inch in thickness and of ivory hardness. The calcareous deposit as a whole is one solid plate about the size of the palm of one's hand. The case illustrates a supreme effort of Nature to wall off a pus cavity in the chest.—A. R. Hoover, M.D., Falas, Turkey.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

DISINFECTANT KRELOS, MULFORD—Krelos.—Mulford disinfectant krelos is said to be a solution of cresols or higher phenol homologues and rosin soap. It is stated to represent approximately: water, 15 per cent.; sodium oxide, 3 per cent.; pyridin, 1 per cent.; rosin acids, 20 per cent.; phenols, 23 to 25 per cent., and hydrocarbons, 36 to 38 per cent.

Actions and Uses.—Mulford disinfectant krelos is an antiseptic, germicide and deodorant.

It is said to be indicated wherever antiseptics or disinfectants are employed.

Manufactured by the H. K. Mulford Co., Philadelphia. No U. S. patent or trademark.

Mulford disinfectant krelos is said to be prepared by addition of coal tar distillates to a rosin soap solution.

It is a dark brown, almost black, liquid, having a specific gravity of about 1.066 and a characteristic cresol-like odor. With water it forms an almost white milk-like emulsion.

The bactericidal power of Mulford disinfectant krelos is determined by the Hygienic Laboratory method. The phenol coefficient, ranging from 5 to 7, is stated on the label.

ANTI-ANTHRAX SERUM.—
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Anti-Anthrax Serum, Mulford.—Anti-Anthrax Serum Mulford is prepared by immunizing horses against virulent anthrax bacilli. At least 80 to 100 Cc. should be injected intravenously as the initial dose. Marketed in packages containing two Mulford aseptic glass serum syringes of 10 Cc. each.

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Antistreptococcic Serum Scarlatinal, Polyvalent.—It is stated to be the serum of horses which have been treated with streptococci taken from scarlet fever cases. Marketed for immunizing purposes in syringes containing 10 Cc. Dose: 20 to 80 Cc.

Therapeutics

BOILS

Furuncles are probably due to an infection, that is, to pathogenic micro-organisms, and the bacterium which most frequently causes this condition is the *Staphylococcus aureus*, a very rapid-growing organism. While this infection is usually local, very frequently it becomes general, as evidenced by crops of boils.

While a patient's general condition should always be investigated and the urine examined to ascertain whether or not nephritis or diabetes is present, very frequently no systemic disturbance is found. Still, it is good treatment to cause free daily movements of the bowels, to modify the food or even temporarily to change it radically, and to give such tonic treatment as is indicated. That is, gastro-intestinal indigestion should be prevented if possible, iron should be given if needed, and often quinin seems of advantage.

If the patient has suffered from a series of boils there is either some general infection, or the patient's ability to inhibit the growth of the organism is insufficient. The treatment now often found satisfactory is the development and use of an autogenous vaccine. Many times, however, a modification of the diet, the giving of tonics, and the administration of yeast are quickly successful in preventing the repetition of furuncles. The yeast should be taken once or twice a day, depending on its laxative effect. While brewers' yeast was long advised, it acts no better than does the ordinary compressed yeast-cake. The dose is about one-third of a cake dissolved in a glass of water and taken once or twice a day. This sour drink is not disagreeable to most individuals. The exact action of the yeast has not been determined, but it seems to be of value in many infections. Primarily it may change the flora of the intestine somewhat, and secondarily its nuclein content may stimulate the formation of the polynuclear leukocytes of the blood. It also may stimulate the formation of an antiferment that is an aid in killing off or inhibiting the growth of the infective germs.

Yeast has been frequently advised and seems valuable as a wash for suppurating wounds or ulcerations, and as a vaginal douche, but probably its local action is only that of causing greater cleanliness, that is, removing mucus and pus, and thus preventing the growth of bacteria.

There is, perhaps, no one best local treatment for a boil, but some good suggestions are made by Dr. D. Macfarlan[1] of Philadelphia. He strongly advises against the incision of a common boil before it has reached the suppurative stage. He finds that to incise a boil in its formative stage does not hasten the cure and necessitates many dressings. If a boil is imminent, or has already begun to develop, he advises the application of a well-warmed poultice of bread and milk to which has been added a small amount of yeast. The poultice should not be too hot, as this will kill the action of the yeast, and should be changed three times daily. As soon as there is some softening of the tissues and the abscess is well delimited, which generally occurs in two or three days, a crucial incision should be made and the core removed at the first dressing, if possible. Macfarlan then advises that the wound be syringed and swabbed with potassium mercuric-iodid solution, 1:2,000, and that wet dressings of the same solution be applied until the part is healed. He thinks that this salt of mercury, while less irritant than corrosive sublimate, is as highly antiseptic and tends to promote healing.

Though the recommendation of bread and milk poultices sounds a little ancient, still this method of applying moist heat and causing local hyperemia is efficient. Many times Bier's hyperemic treatment cannot be applied to the affected part, cupping is very painful and often of questionable value, and while a glycerin paste may sometimes act satisfactorily, it does not hasten the process as well as warm applications.

A warm alcohol poultice, consisting of one part of alcohol and four parts of warm water, applied by means of a mass of gauze covered with oiled silk and bound firmly to the part, is a very satisfactory treatment. This dressing need be changed but twice a day.

Whatever the application, the skin in the region of the boil should be covered with petrolatum or other fat to protect it from irritation, and no application should be made so hot as to injure the skin.

1. Macfarlan: Interstate Med. Jour., November, 1913, p. 1064.

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SATURDAY, FEBRUARY 14, 1914

A REVISION OF HYPOTHESES REGARDING ENDEMIC GOITER

There are few fields of epidemiologic investigation in which medical science has not been obliged to contend with inherited beliefs and widely disseminated conclusions regarding the etiology and mode of transmission of the disease in question, even when there has not existed any body of incontrovertible evidence to substantiate the traditional views. This has certainly been true of the supposed connection between the incidence of endemic goiter and the water-supply of the affected region. The alleged water-borne cause of this thyroid disease has attained especial prominence since H. Bircher related the distribution of the endemic malady in the case of Switzerland, where it has long been prominent, to the occurrence of very definite geologic formations. E. Bircher extended the hypothesis with the contention that the etiologic agent is removed from the rock formations in question in the guise of a colloidal organic substance, by the waters flowing from them. To the medical mind, goiter-producing waters thus became established as the sine qua non of endemic goiter. To support this hypothesis, statistics of the incidence of goiter in relation to special types of water-supplies were collected and marshaled to prove Bircher's contentions. Famous instances were cited, notably that of the village of Rupperswil, in which goiter was found to decrease after the introduction of a new water-supply from a different (geologic) source, and that of Asp, an isolated goiter region in the midst of a goiter-free district, where relief was similarly brought about.

These and related observations which spoke for a causal rôle played by the water, and in particular the reports of the disappearance of endemic goiter after alteration in the drinking-supply appeared so convincing, despite the contradictions which they not infrequently encountered, that the subsequent discussion has largely revolved about other features. The question was at once raised as to the nature of the etiologic agent in the water, when the primary contention was accepted as proved. We have referred in the past to the Bavarian reports denying the validity of the first hypothesis, that is, the interrelation of geologic factors and endemic goiter.[1] To-day we can add the results of a further extensive study carried out in the very regions of Switzerland which have been the sources of evidence for many years.[2] They show that when an accurate survey is made the distribution of endemic goiter proves to be entirely independent of rock, soil or water-supply. Regions having geologically comparable water sources show a varying and variable incidence of goiter, and furthermore, certain sections of villages having entirely different water-supplies may show a uniform frequency of the disease. The explanation for the unlike intensity of goiter in the various localities is not forthcoming. The reputed improvements following a change of water-supply, and so prominently referred to by Bircher, are now charged to hygienic reforms rather than altered geologic factors. Geographic features, traffic, etc., appear to be of far greater importance in determining the seat of disease.

It is noteworthy that in affected districts certain families and houses exhibit repetition of the disease. There is some evidence to suggest the possibility of localized infection in the home, for example. A hereditary relationship could not be demonstrated; for the fact that the children of goitrous parents are affected somewhat more frequently than others may be due to other simultaneously acting factors, such as frequency of contact, rather than the inheritance of disease. Females are everywhere more subject to endemic goiter than the male population, though the distinction does not appear clearly until after the age of puberty is reached. It seems not unlikely that the presumable enhanced functional activity of the thyroid in the female renders the gland more susceptible to the noxious agent.

To untangle the distorted evidence and conflicting conclusions of a generation means progress, even if no positive results follow. Nothing is so detrimental to scientific progress as the persistence of an erroneous theory. It diverts the investigator from the more direct road to the truth; and what is equally unfortunate, it sometimes encourages the practitioner to indulge in therapeutic measures which are based on an entirely mistaken conception of disease.

SOME PUBLIC ASPECTS OF THE WOOD-ALCOHOL INDUSTRY

Nearly a thousand cases of poisoning attributed to wood alcohol (mostly due to drinking it) have been reported in the literature since 1893, the date which marks the advent of methyl alcohol of a high grade of purity, like that sold under the trade names of "Columbian Spirits," "Colonial Spirits," "Manhattan Spirits,"

1. Endemic Goiter and Radio-Activity, editorial, THE JOURNAL A. M. A., June 7, 1913, p. 1798.
2. Dieterle, T.; Hirschfeld, L., and Klinger, R.: Epidemiologische Untersuchungen über den endemischen Kropf, Arch. f. Hyg., 1913, lxxxi, 128.

"Pro Spirit," etc. The growing publicity of these distressing facts, accentuated by the agitation which has been widely fostered in print by THE JOURNAL among other publications, has directed attention to the danger from wood alcohol to such a degree as to arouse considerable uneasiness in the industries connected with its manufacture. We are informed from trustworthy sources[1] that the business involves the annual production and use of about ten million gallons of the substance with a capital investment in this country of about twelve million dollars in the industry, which employs over three thousand working people. It is interesting, therefore, to note the attitude taken in quarters in which business interests must inevitably permeate the purely humanitarian features that are also concerned. We are reminded that since man began to handle fire he has been utilizing dangerous substances to his own good purposes. It is, of course, true that many of the most useful substances are dangerous and poisonous. Deadly cyanids are used for extracting gold; poisonous strychnin is employed as a heart stimulant; toxic phenol finds wide application as a disinfectant, and corrosive acids are used in multitudinous operations.

Despite this indisputable statement, we cannot overlook the equally cogent fact that there are in all the cases mentioned inherent factors which of themselves limit the probability of harmful results in the uses of these poisons. Either there is an adequate understanding of the great dangers involved, or the applications are as a rule in the hands of experts who may be trusted to prevent untoward results. It is contended that methyl alcohol is used extensively as a valuable solvent and in the manufacture of many important materials, and that its legitimate use should not be prohibited. We may agree with these contentions and still raise the question whether or not in the case of the particular poison under discussion, methyl alcohol or wood spirits, the existing legislation is adequate to prevent those disasters which experience has already demonstrated to occur.

It has been noted that wood alcohol presents a unique case for legislation, not only because of its general resemblance to ethyl alcohol, but especially on account of the word "alcohol," which has a definite meaning to the chemist, but is rather associated in the lay mind with "drink." The dangers, however, are by no means limited to the possibility of introducing methyl alcohol in foods or drinks. When, in 1906, the general agitation for a tax-free, denatured ethyl alcohol brought about hearings before the committees of Congress, the injurious action of wood alcohol on the general health and the eyesight of working people handling it in the industries was strongly emphasized by manufacturers employing it, workmen and experts. In the light of this it is interesting to learn the conclusions and recommendations of an unbiased report primarily arrived at from the point of view of the chemist and the industries rather than the alleged one-sided position of the hygienist. This is now available in the pamphlet on wood alcohol prepared for the New York State Factory Investigating Commission by Charles Baskerville, chairman of the Committee on Occupational Diseases of the American Chemical Society.[2] The report does not attempt to pass final judgment on the once debated question which has already been discussed in THE JOURNAL,[3] namely, whether the morbid action of wood alcohol is due to the concomitant impurities or not. Economic reasons prohibit the extended use of chemically pure methyl alcohol in the arts and manufacturing industries, although the purest material is now used in certain products. The abuses of methyl alcohol prior to the more recent activity in the direction of pure foods and drugs must be admitted, and likewise the undoubted toxicity of the methyl alcohol of commerce.

There are at present sixty-three manufacturers of wood alcohol in the United States. In their plants the workmen are liable to come into contact with the vapor—one of the modes of intoxication—only in neutralizing the acetic liquor with lime and in filling the shipper containers. Baskerville maintains that general requirements for ample ventilation should meet these difficulties which, in fact, do not now exist in the works inspected in New York State. In the industries in which wood alcohol is employed it often serves as a solvent. Here it can exert deleterious action if the workmen (1) inhale the vapor; (2) dip their hands and arms into the liquor, or (3) drink it. Ample ventilation will avert the first danger; impervious gloves will prevent the second; only education can ward off the third. The precautionary measures are summarized in the New York report in the following recommendation as to laws which should be enacted if not already on the statute books:

1. To prohibit the presence of wood alcohol in any form of material intended for internal use.

2. To prohibit the presence of wood alcohol in preparations intended for external use on the human body.

3. To require ample ventilation in works in which wood alcohol is made or used in manufacturing products wherein the wood alcohol remains as such; the same law should apply where the products containing wood alcohol are used up, as for example, in varnishing vats in breweries.

4. To require containers in which wood alcohol is marketed to bear suitable display labels of warning.

After all is said, the fact remains that the manufacture and sale of Columbian Spirits and other forms of so-called "deodorized" methyl alcohol is a menace to the health of the people and ought to be suppressed. There is no valid argument for permitting its manufacture so long as an effective and cheap substitute exists.

1. These statistics are given on the authority of an editorial in the Journal of Industrial Engineering and Chemistry, 1913, v, 712.

2. Baskerville, Charles: Wood Alcohol: A Report on the Chemistry, Technology and Pharmacology of and the Legislation Pertaining to Methyl Alcohol. This can be secured by writing to the Commissioner of Labor, Albany, N. Y. An abstract appears in the Journal of Industrial Engineering and Chemistry, 1913, v, 768.

3. Methyl Alcohol as a Poison, editorial, THE JOURNAL A. M. A., Nov 30, 1912, p. 1974.

RHEUMATISM AND TUBERCULOSIS

To the physician of a past generation the term "rheumatism" implied an affection or group of affections characterized by certain common qualities, the chief of which were pain, an inclination to attack the joints and muscles, and a dependence on disordered metabolism. From this rather vague group certain diseases have been definitely set off as depending on specific causes. Among these the action of the gonococcus and streptococcus is now generally recognized. It was due to the persistent labor of the late Antonin Poncet that the dependence of a large group of cases on tuberculosis became recognized. He taught that a considerable number of cases of arthritis were due to tuberculosis in which no tubercles could be found, and in some cases the bacilli were only sparsely represented or might be absent. In the latter case the inflammation was attributed to the toxin of tuberculosis. Other observers have confirmed the findings of Poncet, but the frequency of this form of tuberculosis has not been appreciated generally. The opportunity to demonstrate such a lesion by anatomic research is not readily afforded, because after death from tuberculosis, the presence of tubercle bacilli in the fibrous tissues possesses little significance and cannot be brought readily into etiologic relations with past rheumatic or arthritic symptoms. Stock[1] undertook to procure evidence of the tuberculous nature of many so-called rheumatic diseases of the eye by means of the tuberculin reaction. For this purpose he made use of the focal reaction after injection of old tuberculin. He sought to obtain objective evidence of a reaction in the eye in addition to the subjective sensations of the patient. He found in positive cases pericorneal injection, injection of the ciliary vessels and other signs of local action. In a series of seventy-six cases of so-called rheumatic iritis, iridocyclitis and chorioiditis he found a general reaction to tuberculin in forty-five, and in seven of these, distinct focal signs were present.

Sons[2] has recently applied this method to the examination of rheumatic patients, testing them by means of focal signs in the affected joints. In thirteen cases of rheumatic joint affection he obtained a general reaction in eight cases and an organ or focal reaction in eleven cases. The joint symptoms were so limited to the previously affected joints and so different from the joint pains that form a part of the general symptoms of the reaction to tuberculin that he concludes that they indicate the tuberculous nature of the arthritic disease. He found a general and focal reaction in one case of acute articular rheumatism. In this case he succeeded in demonstrating the presence of tubercle bacilli in the blood. In some cases of apparent tuberculous rheumatism a marked improvement took place after the use of tuberculin.

The importance of this subject makes it necessary to weigh with unusual care the evidence in favor of the tuberculous nature of these cases of rheumatism. Reports of the occurrence of tubercle bacilli in the blood have been frequently made since the startling revelations of Rosenberger in 1909. Most of these reports have been made only on the results of microscopic examination. Several authors have shown fallacies in this method, and recently Kahn[3] has shown from experiments with large quantities of blood that both fibrin and the red blood-cells will leave residues, especially after being treated with antiformin, which are acid-fast and may easily be mistaken for tubercle bacilli. He concludes that animal experiment is the only method by which positive proof of the presence of tubercle bacilli in the blood can be furnished. His own experiments showed that the occurrence of these organisms in the blood is much rarer than has been supposed. Kachel[4] expresses a similar opinion. The evidence of the tuberculin reaction may be taken as indicating a tuberculous focus somewhere in the body, and the focal reaction is usually conceded to point to the affected organ. Hence the evidence for the tuberculous nature of the cases investigated by Sons appears to be convincing; but the fact that joint pains and swellings are common effects of bacterial toxins and especially form a part of the general reaction against tuberculin makes it necessary to be cautious in accepting even this evidence without ample confirmation. As the material is abundant and the subject an important one, we may hope that a positive decision of the question may not be long delayed.

1. Stock: Tuberkulose als Aetiologie der chronischen Entzündungen des Auges, Engelmann, Leipsic, 1907.

2. Sons, E.: Organreaktionen mit Kochschen Alttuberkulin bei klinisch Nichttuberkulosen mit besonderer Berücksichtigung der "asthenischen" und "rheumatischen" Erkrankungen, Beitr. z. Klin. d. Tuberk., 1913, xxviii, 251; abstr., THE JOURNAL A. M. A., Nov. 8, 1913, p. 1855.

3. Kahn, E.: Secondary Tuberculosis, Beiträge zur Klinik der Tuberkulose, 1913, xxviii, No. 2.

4. Kachel: Tubercle Bacilli in the Blood-Stream, Beiträge zur Klinik der Tuberkulose, 1913, xxviii, No. 2.

THE CULTURE OF MEDICINAL PLANTS

The medical profession has long appreciated the desirability of reliable methods of standardizing those drug products which are prepared in comparatively crude ways from "raw materials" such as parts of plants, and decided advances have been made in securing some uniformity of composition and certainty of pharmacologic efficiency in the case of certain widely used extracts and tinctures derived from plant sources. The preparation of isolated "principles" and the separation of the active therapeutic agents from vegetable (and more recently from animal) tissues have marked a step in advance; but the products of the pharmacy, in distinction from those of the chemical laboratory, are too complex and, as yet, still too little understood, to be completely identified so readily with synthetic drugs or extracted alkaloids. So long as there are justifiable grounds for suspecting that not all the pharmacologic and therapeutic effects of the known constituents of

medicinal plants are exhibited in certain tinctures and fluidextracts made from these plants, the latter must continue to receive appropriate attention. This is not a plea for unlimited polypharmacy; it is a logical conclusion springing from the limitations of scientific knowledge in the face of clinical observation. An additional occasion to be concerned for the plants arises from the fact that in many cases they form the sole profitable source of the purified, isolated drugs of commerce.

The culture of the medicinal plants, therefore, deserves greater consideration than has been accorded to it in the past. Although agricultural science has for many years devoted much energy to the elucidation of the relations between soils and plant crops and to the application of advantageous fertilizers, and has within recent years been largely concerned with the improvement of crops by the application of the methods of plant-breeding, the medicinal plants have almost without exception received the indifference which is shown to "wild flowers." Practically no serious attempts have been made in this country to extend the best methods of modern agricultural research to drug plants with a view to improving their medicinal qualities. The culture of tobacco illustrates what purposeful field technic can do to change the chemical composition of a species;[1] and the story of the enrichment of the sugar content of the sugar-beet by appropriate selection furnishes an even more striking illustration.

The Office of Drug-Plant and Poisonous-Plant Investigations of the Federal Bureau of Plant Industry has long recognized the necessity that exists for the improvements just referred to; and steps have been taken to inaugurate work in this direction. An interesting instance of the situation that obtains at present is furnished by a study of the belladonna plant, *Atropa belladonna*, probably the most important of the group of solanaceous plants which depend for their therapeutic action on mydriatic alkaloids.[2] We are informed that the supply of this plant in the wild state is largely exhausted, and future supplies must necessarily depend on cultivation. If the hopes for the future are based on the actual facts of the past we may confidently look for great progress to be made in this direction. The government chemical biologist, Dr. Sievers, informs us that thus far nothing has been found to indicate any correlation between the physical appearance of the plant and the alkaloidal content of its leaves. Luxuriant growth is by no means a criterion of the medicinal value of a plant. One may easily be prepared for this conclusion in view of the fact that many of the drugs or alkaloids represent intermediate products in the metabolism of plants; so that an influence which interferes with the natural growth (as when the tops of the tobacco-plant are removed) may actually lead to an abnormal accumulation of a pharmaceutically desired product which would, in the course of unhindered growth, be converted into other substances.

The variations in the percentage of alkaloids in the leaves of different belladonna plants is exceedingly large. This makes it a difficult matter to determine to what extent soil and climate influence the development of the alkaloids. Where such wide variations exist among individual plants the testing of a general sample from all plants collectively is not always a safe means of judgment. There are certain indications that promise to lead to success in the pursuit of appropriate methods of culture. For example, a considerable number of plants with leaves rich in alkaloids in one season are found to have equally rich leaves in the following season. Furthermore, they frequently manifest the same characteristics at the various stages of growth during the season, in comparison with other plants. We are glad to record these beginnings toward the application of the methods of selective breeding, not only because they promise to lead to a way out of the present chaos in respect to the chemical composition of medicinally important economic plants, but also because they may serve to awaken a more wide-spread concern for an important work of the immediate future.

1. Stutzer, A., and Goy, S.: Der Einfluss der Beschattung des Tabaks auf verschiedene Bestandteile der Blätter, Biochem. Ztschr., 1913, lvi, 220.
2. Sievers, A. F.: Individual Variation in the Alkaloidal Content of Belladonna Plants, Jour. Agric. Research, 1913, i, 129.

MEDICAL SUPPORT OF THE ANTI-VIVISECTIONISTS

Antivivisectionists are usually able to secure a few men who possess the M.D. degree to appear at their meetings and state that experiments on animals are useless. Naturally, because of its scarcity, the testimony of such persons is greatly prized by the opponents of experimentation, and much is made of their professional standing. At the recent International Antivivisection Congress in Washington, "Dr. Richard Cowen, F.R.C.S., London," was on the program for a paper entitled "Vivisection Misleading." What he said was quoted widely in the newspapers, and he was pointed out as an "eminent authority," a "noted savant" and a "big surgeon," who denounced vivisection and declared that it had not added to knowledge of disease.

Investigation has shown that Mr.—not "Dr."—Cowen is only a licentiate of the Irish colleges, that he is not a fellow of the Royal College of Surgeons, London, and that he is not attached to any hospital except a small place in southwest London which has twenty-three beds. In other words, the professional status ascribed to him again illustrates the carelessness of antivivisectionists about telling the truth. There are, of course, some men, usually with bizarre medical training, who are impervious to evidence, and, like the strange persons who argue that the earth is flat, "stand pat" with the middle ages. Such persons set themselves against all the methods that have yielded the triumphs of modern treatment and sanitation.

Against the testimony of these few benighted medical men are the laboratories for animal experimentation connected with medical schools, hospitals, boards of health, government bureaus and privately endowed institutions for research. Against them also are all the means taken by governmental authorities for the preservation of public health — means based almost directly on the results of animal experimentation. Against them also is the overwhelming conviction among enlightened physicians and surgeons that animal experimentation has been and must continue to be of the utmost importance to the advancement of medicine.

The recent International Medical Congress (in London, 1913), composed of representatives from the entire civilized world, passed with only one dissenting vote (that of a woman physician) the following resolution:

Resolved, That this congress records its conviction that experiments on living animals have proved of the utmost service to medicine in the past, and are indispensable to its future progress. That accordingly, while strongly deprecating the infliction of unnecessary pain, it is of opinion, alike in the interests of man and of animals, that it is not desirable to restrict competent persons in the performance of such experiments.

And in 1908 the two greatest scientific bodies of the United States, the American Medical Association and the American Association for the Advancement of Science, passed without a single protest the following resolutions:

WHEREAS, from time to time, attempts, fostered largely by erroneous statements and accusations and false sentiment and prejudice, are made in some parts of this country to enact specific legislation, prescribing the conditions under which experiments on animals may or may not be performed; be it

A. *Resolved*, by the Association, That animal experimentation has been of incalculable benefit to medical science and art, the progress of which is as absolutely dependent on experimental methods as are all the physical and natural sciences.

B. *Resolved*, That no abuse of the practice of animal experimentation in this country has been shown to exist to warrant specific legislation, nor is there any probability of such abuse arising.

C. *Resolved*, by the Association, That the unrestricted performance by proper persons of scientific experiments on living animals is essential to the maintenance and progress of medicine and biology.

When the antivivisectionists are shouting the name of some obscure doctor who supports their views, their enthusiasm might properly be sobered by the foregoing authoritative declarations.

Current Comment

ANIMAL SPIRITS — NERVOUS IMPULSES

Despite the progress of science and the expansion and more precise definition of knowledge from generation to generation, we still adhere to modes of expression which had their origin in the cruder conceptions of earlier days. Few persons ever stop to consider, when they speak of "a man of spirit," that they are unwittingly employing the language of the days of Galen. Yet this is evidently the survival of the old doctrine of spirits. We may believe that Galen had a conception of the nerve-trunks as conductors of something — he called it spirits — to and from the brain and spinal cord.[1] The natural spirits were that undefined property which gave to blood the capacity of nourishing the tissues of the body. The vital spirits were acquired in the heart; and when at last the blood with its vital spirits went to the brain and experienced a sort of refinement for the last time, the animal spirits were separated from it and carried to the body by the nerve-trunks. Here, then, is the beginning of the modern idea of innervation; the animal spirits of Galen have become the nervous impulses of to-day. The ancient "spirits" in the nerves were converted into the *succus nerveus* of later eras when the rising school of physicists began to center their interest in the properties of fluids which can conduct disturbances without themselves traveling. Subsequently it was the *vis nervosa* of Albrecht Haller that furnished the stimulus to the muscle. For a time this was identified with animal electricity. In the present day we express the same underlying conception by the term "nervous impulses." These are not electricity, but they produce it and can be manifested by it. As Harris[1] has said, each generation must think and express itself in the language of its own time.

THE CORONARY CIRCULATION

Precisely like every other muscle, the heart must be profoundly influenced in its working capacity by the character and abundance of the blood-supply which it receives. Owing to the perfection of modern experimental technic it is now possible to study the contractile efficiency of the heart quite independently of the rest of the body. Some of the agencies which tend to affect it have been determined by Markwalder and Starling,[2] who have found that the coronary circulation is intimately dependent on the arterial pressure. In confirmation of other workers, they also find that epinephrin causes dilatation of the coronary vessels, thus giving the weight of added authority to this solution of a somewhat debated question. Obviously it is a matter of no little importance to know in what sense the circulation and hence the nutrition of the cardiac musculature are influenced by alterations in the chemical composition of the blood which traverses it. Carbon dioxid was found to have the same effect on the coronary vessels as on the other blood-vessels and the heart, namely, relaxation or dilatation. In asphyxia the circulation through the heart is decidedly augmented. In fact, whenever the heart is failing, the circulation through its vessels is increased, and this increase may be marked even when the aeration of the blood is well carried out so that no opportunity is allowed in it for the accumulation of carbon dioxid. Under the conditions giving rise to asphyxial and related conditions of the cardiac tissue

1. Compare Harris, D. F.: History of the Views of Nervous Activity, Science Progress, January, 1914, p. 505.
2. Markwalder, J., and Starling, E. H.: A Note on Some Factors which Determine the Blood-Flow through the Coronary Circulation, Jour. Physiol., 1913, xlvii, 275.

it is more than probable that non-volatile metabolites are produced by the imperfectly supplied heart-muscle. They are the most potent agents in causing dilatation of the coronary vessels. By this means a local mechanism is supplied by which the heart-muscle will increase the circulation through itself whenever increased demands are made on its functional capacity. This is only another illustration of the almost endless effective adaptations by which the parts of the organism tend to adjust themselves advantageously to changing physiologic conditions.

SOUTH CAROLINA TO THE FORE

The *Journal of the South Carolina Medical Association* is the latest medical journal to discard the old régime and join forces with those that represent the newer ideals of medicine. The January number of this journal is clean from cover to cover. Only such medicinal substances as have been passed on and accepted by the Council on Pharmacy and Chemistry are now eligible to its advertising pages. The time should be past when the profession is willing to permit the exploiters of proprietary frauds to pay the bulk of the printing and publishing bills of the medical journals which it patronizes. In South Carolina it evidently *is* past. The South Carolina Medical Association is neither a large nor a wealthy organization, yet it is willing to make a not inconsiderable financial sacrifice for the sake of principle. The physicians of this Southern state evidently believe that the Council, which their society, with other component parts of the American Medical Association, brought into being, should receive the moral support of the profession, even though by so doing their official organ loses some "easy money." South Carolina is to be congratulated.

SANITARY SUPERVISION OF A FLOOD RELIEF EXPEDITION

It has been said that an army marches on its stomach. A modern addition to this adage would be that its effectiveness depends on the health of its units. Industrial organizations, likewise, are learning that attention to sanitation and the care of the health of the individual worker is a first consideration for working efficiency. An illustration of the application of this principle is afforded by a report to the general manager of the Pennsylvania Railroad by the superintendent of an emergency relief expedition for repairing damage to the railway in the tremendous floods in western Pennsylvania, Ohio and Indiana in 1913. The floods caused the destruction of miles of tracks and scores of bridges, and railway traffic was almost absolutely suspended in the entire flood region. The enormous damage wrought to the Pennsylvania lines is graphically described and illustrated in a pamphlet issued by the Pennsylvania Company. To open up the roads in the quickest possible time not only required all the resources at the command of those involved, but also compelled them to accept the proffered assistance of other roads. The Long Island Railroad sent a relief party to the Pennsylvania Lines west of Pittsburgh under the command of Superintendent Thornton, comprising over seventy men skilled in emergency railway repair work, with the company surgeon, Dr. J. Kent Worthington, as sanitary and medical officer. The wisdom of providing for the sanitary supervision of the expedition is shown in the outcome. A complete outfit of medicines, bandages, instruments, etc., to meet almost any emergency was provided, of course, but outside of a few minor accidents, little work in this line was required during the period of about a month which the relief party spent in this work. The chief duties of the medical officer were of a preventive character, and included close supervision of the food-supply and its preparation, the water-supply and the camps and bunk-cars, the latter being kept thoroughly cleaned and disinfected, with proper attention to ventilation, etc., and the inspection and examination of all wells or other sources of water-supply before any water was allowed to be used. Each member of the party was personally inspected and questioned each day by the medical officer as to his condition, and approaching trouble was immediately attended to. In addition, the physician lent his assistance to the work of the communities in which he was stationed. The outcome of this care of the men was that the expedition returned home with every man in better physical condition than when he started, as the result, the superintendent says, of this careful supervision of the medical officer. The superintendent in his report makes the general observations that he considers the presence of a medical man with an expedition of this sort as absolutely essential to its efficient work; that the theory of this is thoroughly recognized in military affairs; that there is no reason why it should not apply to other classes of work of a similar character, an army, a football team or a railway force, and that unless the members of an expedition, whatever it may be, are kept in good physical condition, inefficiency will result. This represents the application to industrial affairs of the principle of sanitation first which permitted the building of the Panama Canal.

INDUSTRIAL SANITATION IN THE TROPICS

Not only the railroads of this country, but also the great tropical plantation companies have found it profitable to apply to their enterprises the principles of modern sanitation, thereby keeping the death-rate among their employees at a point that compares favorably with the rates of communities more favorably situated. The methods employed are efficient medical and sanitary organization and the application of the methods demonstrated in the work on the Panama Canal. In its detailed reports of the medical department for 1912 and 1913, the United Fruit Company, one of the largest of these plantation enterprises, with plantations in Panama and other Central and South American countries and in Cuba, with an aggregate of over 65,000 employees, shows some astonishing results. For instance, in the Panama division, for 1912 the average death-rate for the whites among the employees was 12 and of the blacks 11.36 per thousand. In 1913 the death-rate among the whites was 3.33 and for the blacks 7.7, giving a general average of 7.5 per thousand. This

extremely low mark was not attained in the other divisions of the company's plantations, but with a splendid sanitary organization, by large expenditures for suitable houses, hospitals, drainage and mosquito elimination, and by periodic visits to all the plantations by physicians, the health has been kept at a high average. The sanitary forces always are first in the field when new plantations are opened up, and all the principles of modern sanitation in the tropics are applied as rapidly as possible. The reports state that this work has not followed in the wake of that on the Panama Canal, but that the work of mosquito elimination and other measures were applied immediately after the demonstration of mosquito transmission of the tropical fevers. The problems involved are difficult and the work is enormous, but this large corporation has found that it pays abundantly. The reports show that the personnel of the medical organization has been drawn from all of the best medical schools in the United States, and constitutes an efficient sanitary force. With the completion of the Panama Canal the large plantations like those of the United Fruit Company will continue to furnish opportunities for the young men from the colleges to gain experience and do research work in the tropical diseases.

SMOKING ON STREET-CARS

Sooner or later, every city large enough to need street-cars has to settle this question: Should or should not smoking be permitted on such cars? In all cars of the closed type—the most prevalent kind—when smoking is permitted it is usually limited to the front or rear platforms. As passengers need to use both the rear and front platforms in boarding or leaving cars, the condition of these parts of the car is a matter that directly concerns the public health. While many cities have antispitting ordinances, these laws are, in the majority of instances, more honored in the breach than in the observance. As a result, the street-car platforms where smoking is permitted become both an offense to the eye and a menace to health. Where smoking is allowed on the front platform, and particularly in that type of car that has the front platform enclosed, the motor-man works from morning until night in a tobacco-smoke-impregnated atmosphere, while the passengers who leave the car by the front platform have to pass through this expectoration-decorated "fume-chamber." When the question, Shall smoking be abolished on street-cars? comes up for settlement with any city, there can be only one answer. From the point of view of hygiene and common cleanliness, to say nothing of the comfort of the majority, smoking on street-cars is an indefensible nuisance.

Memory.—Now and then one learns something, but one forgets the whole day long. Moreover, our memory is like a sieve, the holes of which in time get larger and larger. The older we get, the quicker anything intrusted to it slips from the memory, whereas, what was fixed fast in it in early days is there still. The memory of an old man becomes clearer and clearer, the farther it goes back, and less clear the nearer it approaches the present time, so that his memory, like his eyes, becomes long-sighted.—Schopenhauer.

Medical News

CALIFORNIA

Opening of Polyclinic.—The San Francisco Polyclinic formally opened its new building, which has been erected at a cost of $25,000, and celebrated the twenty-fifth anniversary of the founding of the institution, January 24. The institution now cares for about 600 patients a month at a cost of about $700.

New Officers.—Contra Costa County Medical Society at Oakland, January 19: president, Dr. Ursa S. Abbott, Richmond; secretary-treasurer, Dr. Earl B. Fitzpatrick, Martinez. ——Monterey County Medical Society at Salinas, January 9: president, Dr. Garth Parker; secretary, Dr. Hezediah T. Crabtree, both of Salinas.——Fresno County Medical Society at Fresno, January 6: president, Dr. Charles O. Mitchell, Fowler; secretary, Dr. Lamont R. Willson, Fresno.——San Joaquin County Medical Association, at Stockton, Dec. 26, 1913: president, Dr. John D. Dameron; secretary, Dr. Raymond T. McGurk, both of Stockton.——Long Beach Branch of the Los Angeles County Medical Association, Dec. 12, 1913: president, Dr. Wilmer L. Dickerson, Long Beach; secretary-treasurer, Dr. C. G. Foote.

DELAWARE

Hospital to Be Enlarged.—The Physicians and Surgeons Hospital, Wilmington, is to be enlarged by an addition to cost $4,200.

New Officers.—New Castle County Medical Society at Wilmington: president, Dr. George W. K. Forrest; secretary-treasurer, Dr. Talison H. Davies, Farnhurst.

State Board Reappointed.—Governor Miller has reappointed as the State Board of Medical Examiners Drs. Henry W. Briggs and Abram E. Frantz, Wilmington, and Drs. Edwin S. Anderson and Presley S. Downs, Dover.

Personal.—Drs. Pietro A. M. Rovitti, Napoleon B. Morrison, Bernard A. Jenkins and Harry M. Frist have been appointed vaccine physicians for Wilmington.——Dr. Wilson R. Pendleton, Wilmington, has been appointed superintendent of the State Sanatorium for the Treatment of Tuberculosis, Montrose, N. C.

IDAHO

New Officers.—Bannock County Medical Society, at Pocatello, January 21: president, Dr. Edward N. Roberts; secretary-treasurer, Dr. Joseph V. Clothier, both of Pocatello.

Northern Idaho Physicians Meet.—The first meeting of the Northern Idaho District Association since its organization was held in Lewiston, January 15; the opening address was delivered by Dr. James M. Fairly, Orofino. It was decided to hold the next meeting at Lewiston.

ILLINOIS

New Officers.—Stephenson County Medical Society at Freeport, January 29: president, Dr. Karl F. Snyder; secretary, Dr. J. Sheldon Clark, both of Freeport.

State to Distribute Antityphoid Vaccine.—The State Board of Health announced, January 4, that free vaccine for the prevention of typhoid fever was ready for distribution to all parts of the state.

Personal.—Dr. Ralph T. Hinton, superintendent of the Elgin State Hospital was appointed superintendent of the Peoria State Hospital, February 9, succeeding Dr. Henry J. Gahagan, who has been transferred to the Elgin State Hospital.——Dr. Marcus Whiting, Peoria, who is about to retire from practice and live on a farm in Northern Wisconsin, was given a farewell dinner by the Peoria Medical Society, at which he was presented with a gold-headed cane.——Dr. William Freeman, North Crystal Lake, is reported to be seriously ill with typhoid fever.——Dr. Clesson C. Atherton, Elgin, physician to the Lincoln State School and Colony, has been appointed assistant superintendent of the Watertown State Hospital.

Chicago

Monod in Chicago.—Dr. Gustav Monod, Paris, will speak before the Chicago Medical Society March 4.

Post-Graduate School Reconstructed.—In celebration of the reconstruction of the Post-Graduate Medical School of Chicago, the directors held a reception in the institution, January 22, from 2 to 9 p. m.

Personal.—Dr. Arthur R. Edwards has completely recovered from the appendectomy and cholecystectomy performed January 6, and has resumed practice.——Dr. Charles F. Sanborn has resigned as assistant warden of the Cook County Hospital, and has been appointed superintendent of the Cincinnati Hospital.——Dr. Carl, Koenigsberg, Germany, is to be assistant to Dr. Albert J. Ochsner at the College of Physicians and Surgeons of Chicago. His position in Koenigsberg will be filled by a surgeon from Chicago, who will go to Koenigsberg as exchange lecturer.——Dr. Frank Smithies has been elected gastro-enterologist to the Augustana Hospital.

Housing Conditions in Chicago.—According to the *Bulletin of the Chicago Department of Health*, housing conditions in the city are improving, as far as the construction of new houses and tenements is concerned. But the conditions in the old buildings in the older parts of the city do not show great improvement. In 1913, the department passed 9,788 plans for dwellings and tenements; 38 per cent. of these were for single family dwellings. These are built in outside parts of the city, and are of a very desirable type. It is stated that 77.43 per cent. of the total number of dwellings and tenements erected during 1913 were designed for two families. This means that, under the conditions prescribed for the erection of such dwellings, there is an immense improvement in the matter of air, light and sunshine, which will make for improvement in health conditions. It is also said that of 15,105 apartments, provided in the buildings erected during the year, 96.34 per cent. were provided with bath-tubs.

Health and the Open Winter.—The old-time theory that an open winter was prolific of ill-health seems to be disproved for the present season, in the city of Chicago, at least. The winter has been unusually mild, the thermometer on January 28 recording 60 degrees. There has been practically no snow throughout the months of December and January. According to the *Bulletin of the Chicago Department of Health*, there has been for the eight weeks ending January 24 a reduction of 29.6 per cent. in the pneumonia death-rate as compared with the average of a like period for the previous five years; 23.3 per cent. in influenza and 7.8 per cent. in the rate for tuberculosis. There have likewise been reductions of the incidence of measles, which dropped 82 per cent.; scarlet fever, 54 per cent.; diphtheria, 24.2 per cent., and whooping-cough, 18.2 per cent. The *Bulletin* accounts for this by the opportunity given by the mild weather for out-door living and better ventilation in living quarters. It is estimated that in the diseases named there has been a saving of 515 lives during the six weeks of December and January for which the comparison was made.

INDIANA

New Officers.—Clark County Medical Society: president, Dr. W. B. Marshall Varble; secretary, Dr. Isaac Ruddell, both of Jeffersonville.

Medical Staff Banqueted.—The Sisters of St. Elizabeth's Hospital, Lafayette, entertained the members of the medical staff and the lecturers of the training school for nurses, January 28. Dr. George F. Beasley officiated as toastmaster.

Personal.—Dr. T. Victor Keene, Indianapolis, fractured his left arm when his automobile overturned near Indianapolis, January 30.——Dr. John S. Ragan has been appointed physician at the Indiana Boys' School, Plainfield.——Dr. Joseph R. Bloomer, Rockville, has been appointed local surgeon of the Vandalia system.

Anti-Tuberculosis Society Meets.—The annual meeting of the State Society for the Study and Prevention of Tuberculosis was held at Indianapolis, January 31. Drs. Henry B. Shacklett, New Albany; S. Edgar Bond, Richmond; Fred A. Dennis, Crawfordsville; Eric A. Crull, Fort Wayne, and James A. Snapp, Goshen, were elected directors.

Cost of Care of Insane.—According to the report of the Board of State Charities for 1913, it cost the state $204.79 to maintain each inmate of the five state insane hospitals during the year. At the close of the year there were 6,100 known insane in the state; of these, 5,577 were in public institutions, and 523 in outside institutions; 5,090 were under state care and 1,010 without state care. The board emphasized strongly the overcrowded condition of the state hospitals.

KENTUCKY

New Officers.—Clark County Medical Society at Winchester, January 24: president, Dr. William A. Bush; secretary-treasurer, Dr. Harvey R. Henry, both of Winchester.

New Hospital Turned Over to the City.—The new City Hospital, Louisville, was turned over to Mayor Buschemeyer by the Hospital Commission, February 7. The ceremonies, which were brief, were held in the amphitheater of the new hospital.

To Prevent Blindness.—At the meeting of the Jefferson County Medical Society, January 19, unanimous endorsement was given to the bill introduced by the Kentucky Society for the Prevention of Blindness which provides for a strict report of cases of trachoma or ophthalmia in new-born children.

Personal.—Dr. Lewis S. McMurtry has been elected presirent of the medical staff of the John N. Norton Memorial Infirmary, Louisville, vice Dr. J. B. Marvin, deceased.——Dr. George W. Lawrence, Louisville, is reported to be critically ill at his home.——In the case of Doretta Hill against Dr. John W. Kremer, Louisville, in which claim for $20,000 damages was made for alleged malpractice and neglect, the judge, after hearing the evidence of the plaintiff, instructed the jury to return a verdict in favor of Dr. Kremer.

Staff for Louisville City Hospital.—The method of the appointment of the visiting, medical and surgical staff for the new City Hospital has been the subject of considerable comment on the part of the profession as the furnishing of the hospital nears completion. The Commercial Club has advocated the passage of a bill by the legislature now in session providing for the control of the new City Hospital by a non-political commission composed of four members with the mayor ex-officio. The mayor, who is a physician, has signified his opposition to this plan of government and has announced that he has placed the medical and surgical control of the City Hospital in the hands of the board of trustees of the University of Louisville, Medical Department. This announcement caused a vigorous protest from an organization called the Medical Club, composed, largely, of physicians not connected with the Medical Department faculty. These objections have been overcome by the announcement by the trustees of the university that the appointments are to be made by a special committee composed of the following: Drs. Ap Morgan Vance, one of the members of the commission that erected the hospital, and Ben Carlos Frazier, representing the non-school men; Drs. Henry H. Grant and William A. Jenkins, representing the faculty of the University, with the assistant dean, Dr. David C. Morton, ex-officio member of the committee. According to the instructions from the trustees to this committee, they are to recommend to the board of trustees, which will turn over the recommendations to the Board of Public Safety for appointment, a staff of physicians and surgeons who are to look after the sick poor as a chief consideration, the teaching portion of the hospital being a secondary consideration. They are instructed to use their judgment in regard to the appointment of members of the medical faculty for the school term and non-school men during the vacation period. The committee will shortly meet and make the selection of the staff to be recommended for appointment by the Board of Public Safety.

LOUISIANA

Hospital to Purchase Policlinic.—At a meeting of the board of directors of the Charity Hospital, New Orleans, January 19, it was decided to acquire the Policlinic property at Tulane Avenue and Liberty Street, using the building for clinical purposes.

Railroads Will Help State Health Board.—At a conference between representatives of the railroads of the state and Dr. Oscar Dowling, a committee consisting of Dr. E. Denegre Martin and J. F. Porterfield was appointed to confer with the board in regard to the reforms deemed necessary.

Medical Society Organized.—At a meeting of the medical men of Acadia Parish at Crowley, January 30, the Acadia Parish Medical Society was organized, and the following officers were elected: president, Dr. David Dougal Mims; secretary, Dr. M. L. Hoffpauir, both of Crowley. The first meeting of the society will be held April 2.

Sanatorium Organized.—The Cooperative Sanatorium Association was organized at Lafayette, January 26, with the following officers: president, Dr. John D. Trahan; vice-presidents, Drs. Frederick R. Tolson and Eric Guilbeau; secretary, Dr. John F. Mouton, and treasurer, Dr. Felix E. Girard. The institution will be named the Attakapas Sanatorium.

New Officers.—Rapides Parish Medical Society at Alexandria, January 5: president, Dr. Robert L. Randolph; secretary-treasurer, Dr. James A. White, both of Alexandria.——Lincoln Parish Medical Association at Ruston: president, Dr. Joseph L. Smith, Dubach; secretary, Dr. William S. Rutledge, Ruston.——Avoyelles Parish Medical Society at Bordelonville: presi-

dent, Dr. Sambola J. Couvillon; secretary, Dr. Paul E. Brahic, both of Moreauville, both reelected.——St. James Parish Medical Society at Convent: president, Dr. Clifford A. Himel, St. James; secretary-treasurer, Dr. Joseph E. Doussan, Lutcher. ——Orleans Parish Medical Society at New Orleans: president, Dr. Charles N. Chavigny; secretary, Dr. Edward L. King, both of New Orleans.

MICHIGAN

Hospital Notes.—The State Commission has appointed a board of control for the new municipal John F. Eilbert Memorial Hospital, Wyandotte.——The Detroit Board of Health has asked for an appropriation of $1,744,445, of which $1,250,000 is for hospital purposes alone.

Personal.—Dr. John L. Burkart, Big Rapids, assumed charge of the office of secretary of the State Board of Health, February 2, succeeding Dr. Robert M. Dixon, Lansing, who has assumed his new duties as superintendent of the State Home for Epileptics.——Dr. Louis H. Chamberlin, Grand Rapids, left for Europe February 1.——Dr. and Mrs. L. J. Pelletier, Ludington, returned from Europe this month.

Detroit Pediatrists Organize.—The Detroit Pediatric Society held its first annual meeting January 28, and elected the following officers: president, Dr. Thomas B. Cooley; vice-president, Dr. Herbert M. Rich; secretary-treasurer, Dr. Francis Duffield. The society is to hold eight regular meetings each year, and the membership is composed of active members, limited to twenty, associate members and honorary members.

New Officers.—Delta County Medical Society, at Escanaba, January 20: president, Dr. James Mitchell, Gladstone; secretary-treasurer, Dr. Harry W. Long, Escanaba.——Houghton County Medical Society at Houghton: president, Dr. Peter D. MacNaughton, Calumet; secretary-treasurer, Dr. Isadore D. Stern, Houghton.——Muskegon-Oceana Counties Medical Society, at Muskegon, January 2: president, Dr. Jacob Oosting; secretary, Dr. Jacob T. Cramer, both of Muskegon. ——Hillsdale County Medical Society at Hillsdale, Dec. 30, 1913: president, Dr. Burt F. Green; secretary-treasurer, Dr. Charles T. Bower, both of Hillsdale.——Ionia County Medical Association at Ionia: president, Dr. Harry B. Knapp; secretary, Dr. John J. McCann, both of Ionia.——O. M. C. O. R. O. (Otsego, Montgomery, Crawford, Oscoda, Roscommon, Ogeman) Counties Medical Association, at Grayling: president, Dr. Frank E. Abbott, Sterling; secretary, Dr. Robert J. Beebe, West Branch.

MINNESOTA

Personal.—Dr. C. L. Blunt has returned after eight months in Bangkok, Siam.——Dr. C. A. Scherer, Minneapolis, has been appointed intern at Lymanhurst, in charge of the Minneapolis Municipal Tuberculosis Camp which was opened February 1.

Hospital Notes.—A hospital has been established by the physicians of Rush City. The institution occupies the second floor of the Electric Light Building, and will be in charge of a trained nurse.——A bond issue has been authorized by the Minneapolis City Council for the construction of a new hospital for contagious diseases, to be eight stories high, three stories of which will be completed and furnished this year.

War on Tuberculosis.—At a meeting of the board of directors of the State Antituberculosis Association, it was reported that $200,000 has been obtained during the year for the state institution at Walker, which now can accommodate 175 patients. More than $269,000 has been appropriated for sanatoria in Ramsey, Hennepin, Polk, Clay, Becker, Goodhue, Lincoln, Pipestone, Marshall, Lake, Renville, St. Louis, Ottertail, Wabasha, Lyon, Murray and Watonowan counties.

New Officers.—Ramsey County Medical Society, at St. Paul, January 26: president, Dr. John Milton Armstrong; secretary, treasurer, Dr. Charles E. Smith, Jr., both of St. Paul.——Park Region District County Medical Society, at Fergus Falls, January 22: president, Dr. Theodore N. Kittleson, Fergus Falls; secretary-treasurer, Dr. Randall Ashby.——Upper Mississippi Medical Society, at Brainerd, January 6: president, Dr. Frank H. Allen, Staples; secretary, Dr. Francis J. A. Bennet, Brainerd. ——Goodhue County Medical Society, at Red Wing, January 6: president, Dr. Peter H. Cremer; secretary-treasurer, Dr. Alonzo T. Conley, both of Cannon Falls.——Winona County Medical Society, at Winona, January 6: president, Dr. James L. Lynch; secretary, Dr. Hugh F. McGaughey.——Blue Earth County Antituberculosis Society, at Mankato: president, Dr. John W. Andrews; vice-president, Dr. Chelsea C. Pratt, both of Mankato.——Camp Release District Medical Association, at Montevideo, January 29: president, Dr. Herman M. Johnson, Dawson; secretary-treasurer, Dr. Reuben D. Zimbeck, Montevideo.——Brown and Redwood Counties Medical Society, at New Ulm, January 29: president, Dr. Dirk V. Gleysteen, Lamberton; secretary-treasurer, Dr. George F. Reineke, New Ulm.

MISSISSIPPI

Health of the State.—The Mississippi Health Bulletin for the first nine months of 1913 shows that during this period there were 25,641 births, of which 13,967 were white and 11,674 colored. During the same period 15,104 deaths were reported, of which 5,332 were whites and 9,772 negroes. The malarial patients reported were 49,159, almost equally divided between white and colored patients. Tuberculosis during the same time was reported in 3,665 cases, of which 1,583 were whites and 2,062 negroes, the white death-rate from tuberculosis being 6.7 per cent. and that of the negroes 15.1 per cent.

New Officers.—Lauderdale County Medical Society at Meridian: president, Dr. T. D. Bourdeaux; secretary-treasurer, Dr. Albert F. Douglas, both of Meridian.——Hinds-Rankin Counties Medical Association: president, Dr. Robert S. Curry, Jackson; secretary-treasurer, Dr. James H. Fox, both of Asylum, both reelected.——Northern Mississippi Tri-County (Tate, Panola and De Soto) Medical Society at Senatobia, January 29: president, Dr. James M. Jenkins, Crenshaw; vice-president for Tate County, Dr. Buey; for Panola County, Dr. Albert P. Alexander, Como; for De Soto County, Dr. C. L. Maples, Olive Branch; secretary-treasurer, Dr. William D. Smith, Senatobia.——Meridian Tuberculosis Association: Dr. T. D. Bourdeaux, vice-president.

MISSOURI

New Hospital Opened.—The People's Hospital at Bevier, recently erected at a cost of $35,000, was opened last week. Dr. Terrence P. Gronoway is in charge of the institution.

District Tuberculosis Hospital Law Unconstitutional.—The supreme court has declared unconstitutional the law providing for tuberculosis hospitals, on account of the irregularity of the tax levy.

Personal.—Dr. Robert P. C. Wilson, Platte City, has been elected superintendent of the State Colony for the Feeble-Minded, Marshall.——Dr. and Mrs. Frank A. Lee, Skidmore, started for Honolulu January 12.——Fire in the house of Dr. Horatio S. Jones, Kansas City, did damage to the extent of $1,800.

Sanitary Survey for St. Joseph.—Dr. Joseph H. White, U. S. P. H. S., surgeon in charge at New Orleans, has arrived in St. Joseph to work with the local Board of Health regarding the proposed sanitary survey, which is designed to increase the efficiency of the Health Department, and to obtain better enforcement of health measures.

State Board Election.—The Missouri State Board of Health, January 2, elected the following officers for the current year: president, Dr. Francis H. Matthews, Liberty; vice-president, Dr. Godfrey O. Cuppaidge, Moberly; secretary, Dr. James A. B. Adcock, Warrensburg (reelected).——J. L. Walker, an osteopath of Memphis, has been appointed a member of the State Board of Medical Examiners.

St. Louis

Negroes Want Hospital.—Negroes of St. Louis have started a campaign to raise $30,000 for the erection of a more commodious and modern Provident Hospital.

Doctors' Club Organized.—At the Doctors' Club, which was organized January 16, Dr. Eugene R. Waterhouse was elected president and Dr. Albert F. Stephens, secretary.

Personal.—Dr. Solomon A. Weintraub has sailed for the Mediterranean.——Dr. Walter R. Hewitt, medical director of the United Railways Company, sailed for Europe January 31.

Medical Library Dedicated.—The St. Louis Municipal Medical Library, located in the room originally designed for it at the City Hospital, was dedicated with appropriate ceremonies January 20. The library has already 3,500 volumes.

Quick Work on Small-Pox Hospital.—The addition to the quarantine hospital, south of Jefferson Barracks, for small-pox cases, was built in two days by the Board of Public Improvements. The structure is 22 by 50 feet, and contains two wards, each of which has accommodations for twelve patients.

NEW YORK

The Rural Death-Rate.—The State Grange, at its convention in Poughkeepsie on February 5, pointed out that

while the death-rate of New York City is 13.7 per thousand population, towns under 8,000 population have a death-rate of 15.4, and passed resolutions urging the establishment of a division of rural hygiene in the New York State Department of Health.

Inwood Hospital Work.—The Hospital and House of Rest for Consumptives at Inwood-on-the-Hudson cared for 133 patients last year, which were received from various hospitals, clinics, settlements and charitable institutions. Of this number 43 were discharged and 21 died. The total number of days care given was 23,786, an increase of 3,496 over the preceding year. The average stay of each patient was 178.8 days as compared with 147.7 for the year 1912.

Personal.—Dr. Edwin A. Walcott has been appointed chairman, and Drs. Charles L. Barber, Elmer J. Bissell, Loron W. Howk, William B. Jones and Charles R. Sumner members of the Rochester City Public Health Committee.——Dr. Melville B. Dickinson has been appointed chief medical inspector of the public schools of Troy.——Dr. Henry L. Shaw of Albany, has been appointed director of the division of child hygiene of the Health Department of the State of New York, and Dr. Augustus B. Wadsworth of New York has been appointed director of the division of laboratories and research.

To Merge All Medical Societies.—Dr. W. Douglas Ward, president of the Rochester Pathologic Society, has appointed a committee consisting of Drs. William B. Jones, Charles R. Barber, Willis E. Bowen, Ralph R. Fitch, William W. Percy, J. H. Treton, Kathleen L. Buck and David B. Jewett to formulate plans for the union of all medical societies of Rochester and Monroe County and for the erection of a suitable club house. This project will include the Monroe County Medical Society, Rochester Pathologic Society, Rochester Academy of Medicine, Rochester Hospital Medical Society, Rochester Homeopathic Medical Society, Rochester Hahnemann Medical Society and Blackwell Medical Society, the latter an organization of women.

Work of Milk Commission.—The Milk Commission of the Medical Society of the County of New York has made its annual report which shows that its work has progressed successfully during the past year. The commission has certified to the production of 11,842 quarts of milk daily, produced on twenty-two farms, of which that from seventeen farms is bottled milk produced throughout the year. In addition 2,580 quarts daily from six other farms were inspected. Last year four new farms were added to the certified list. These new farms were in general superior in equipment to the older ones, and the results of the tuberculin tests were in some respects more encouraging. The commission urged on the members of the society an increased interest in certified milk, since it was only by the interest of the medical profession that such a movement could thrive.

Small-Pox at Niagara Falls.—Dr. Herman M. Biggs, New York City, State Commissioner of Health, on January 25 telegraphed to Dr. Edward Clark, Buffalo, in charge of the department campaign against small-pox in Niagara Falls, to have a meeting called by the mayor of the local authorities, manufacturers and business men, at which the following demands of the department, in regard to the epidemic, were to be made: Close all places of public assemblage, including churches, theaters, dance halls, moving-picture theaters and other places of entertainment; close the public schools, or exclude unvaccinated children from attendance; close all factories or exclude unvaccinated employees; close all hotels or require vaccination of employees; enforce a rigid quarantine against all houses containing small-pox cases and all exposed and unvaccinated persons; remove all cases to isolation hospital; enforce strictly the sanitary code of the city. The small-pox situation is constantly improving since the vigorous action of the State Board of Health and the local civil and medical authorities in enforcing vaccination and thorough quarantine. February 2 there were reported 110 cases still under quarantine with few new cases, and vaccination was still going on among schoolchildren and the employees of industrial establishments and business houses. The threatened proclamation by State Health Commissioner Biggs that it would be dangerous to visit Niagara Falls was not issued in view of the improved situation. The health authorities on the Canadian side, however, require that all persons coming from or going to Niagara Falls must have been successfully vaccinated within seven years.

New York City

Hospital Leases Dwellings.—The New York Hospital has extended its control over additional property in its vicinity by leasing two dwellings just opposite the hospital on West Sixteenth Street. Recently it was announced that a block had been purchased further up town as a site for a new building.

Typhus Fever at Quarantine.—A case of typhus fever was discovered on the steamship *Rochambeau* which arrived in New York on January 27, and another case has developed among the steerage passengers on the *Belvidere*, detained at Hoffman's Island for observation; this makes seven cases of typhus met with at this port since January 7.

Diphtheria on Warships.—A short time ago it was noted that diphtheria had appeared on the battleship *Arkansas* and that the officers and men were quarantined at the Brooklyn Navy Yard. Several new cases have been discovered on the *Arkansas* and one has appeared on the *North Dakota*. There are in all more than two thousand men under quarantine and close scrutiny.

Contagious Hospital for Queens.—The Board of Estimate passed a resolution on February 6 authorizing the Board of Health to go on with the work of constructing a hospital for contagious diseases on Haacke farm near Jamaica, L. I. A large number of the residents of Queens objected to this site for the hospital, but the committee appointed to investigate reported that there was no other site available.

Out Practice Alumnae Honor Fellow Worker.—A subscription dinner is to be given by the alumnae of the out practice of the New York Infirmary to Dr. Annie S. Daniel in recognition of her work in the out practice, February 19, at the Hotel McAlpin. The speakers are representatives of Dr. Daniel's varied fields of activity and it is hoped to gather together on this occasion the men and women who have been associated with her work.

Laymen to Aid Health Department.—Dr. Sigismund S. Goldwater, who assumed charge of the office of health commissioner February 2, proposes to have, in addition to the medical advisory board, a committee of laymen to act in conjunction with it, and to advise the department and the commissioner as to plans of action. He also announces his intention of tabulating the tuberculosis cases in the city, many instances of which are unrecognized.

Personal.—Prof. Emil Abderhalden of the University of Halle, Germany, has received a call to lecture at Columbia University. He will begin his lectures next autumn.——Dr. George E. Brewer has been appointed to the chair of surgery at the College of Physicians and Surgeons of Columbia University. This post carries with it the important position of head of the surgical division of the Presbyterian Hospital. ——Dr. Walter B. James has asked to be relieved from membership in the medical faculty of Columbia University. He will retain his professorship and continue to direct research students from time to time.

Physicians' Aid Association Meets.—The Physicians' Mutual Aid Association of New York held its forty-fifth annual meeting recently at the New York Academy of Medicine and elected the following officers: president, Dr. W. F. Mittendorf; vice-presidents, Drs. W. C. Phillips and J. W. Ingalls; recording secretary, Dr. A. Edward Davis; corresponding secretary, Dr. W. B. Jennings; assistant secretary, Dr. Edward S. Peck; treasurer, Dr. Daniel Lewis. The association has a membership of 367, and has paid out $39,000 for 39 deaths. The expenses for each member was $20 during the past year. The club has a reserve and beneficiary fund of $83,000.

Central Council of Public Health Created.—The third conference of the private health agencies of the city interested in some phase of public health work was held in the New York Academy of Medicine on February 4. A plan of organization for the Health Federation of the City of New York was adopted. About 150 private organizations are interested in this federation. The plan includes the establishment of an advisory body to be known as the Central Council of Public Health. The membership of this council is limited to fifteen persons and the following members were announced: Dr. John H. Huddleston, Bailey B. Burritt, Dr. Charles Loomis Dana, Homer Folks, Miss Pauline Goldmary of the Consumer's League, James Perkins, Dr. Edward L. Keyes, Jr., Dr. Philip Vaningen, Miss Lillian D. Wald, Prof. C. E. A. Winslow and E. H. Lewinski-Corwin.

OHIO

Personal.—Dr. Carl A. Hamann has been placed in charge of the surgical department, and Dr. C. B. Carter in charge of the medical department of the Cleveland City Hospital.—— Dr. George L. King, Alliance, has been appointed a member

of the consulting staff of the Ohio State Blind Commission. ——Dr. Mabelle L. Watson, Ashtabula, was operated on in the Ashtabula General Hospital, January 29, and is reported to be doing well.

New Officers.—Stark County Medical Society, at Canton, January 20: president, Dr. Henry C. Eyman, Massillon; secretary-treasurer, Dr. Charles A. LaMont, Canton, (reelected). ——Butler County Medical Society, at Hamilton, January 15: president, Dr. Louis H. Frechtling; secretary-treasurer, Dr. Wilmer E. Griffith, both of Hamilton.——Canton Medical Society, January 30: president, Dr. Lewis A. Buchmann; secretary-treasurer, Dr. Grover C. Goudy (reelected).——Salem Physicians' Club, January 29: president, Dr. John S. Gallagher; secretary, Dr. Ludwig F. Derfus.

Scientific Exhibit for State Association Meeting.—In addition to the usual commercial exhibits the Ohio State Board of Health, the Ohio Commission for the Blind and the Ohio Board of Administration are preparing scientific exhibits for the next annual meeting of the Ohio State Medical Association, to be held in Memorial Hall, Columbus, May 5, 6 and 7. The State Board of Health has arranged to show its elaborate traveling public health exhibit in the hall during the convention, presenting in conjunction the usual "health week" program of lectures, mechanical models and moving pictures.

Cincinnati

Personal.—Prof. William B. Wherry, who has been confined to his home through serious illness, is now reported as convalescent.——Dr. Arch I. Carson received the appointment of clinical professor of surgery in the College of Medicine, University of Cincinnati.

Officers of Research Society.—The annual election of officers of the Cincinnati Research Society took place February 5. The following physicians were elected: president Dr. Oscar Berghausen; vice-president, Dr. E. R. Remelin; secretary, Dr. J. L. Tuechter; executive committee, Dr. H. McE. Knower and Dr. Charles Goosman.

OKLAHOMA

State Board May Revoke Licenses.—The assistant attorney-general has ruled that it is not necessary for the State Board of Medical Examiners to go into court for the purpose of revoking licenses for the practice of medicine in the state.

Personal.—Dr. Edward F. Hurlburt, Chandler, was seriously injured in a runaway accident recently.——Dr. J. W. Coleman has been appointed assistant city physician of Muskogee, to care for the indigent colored population of the city.——Dr. William M. Cott, Okmulgee, who was operated on for appendicitis in St. Louis recently, has recovered and returned home.——Dr. Parkey H. Anderson has been appointed Indian physician at Anadarko.——The University of Michigan has conferred on Dr. Edward H. Troy, McAlester, the degree of B.A. in acknowledgment of work done by him since leaving the university.

New Officers.—Ottawa County Medical Society: president, Dr. John C. Jacobs; secretary-treasurer, Dr. Guy P. McNaughton, both of Miami.——Seventh Consular District Medical Society, at Muskogee, January 27: president, Dr. John E. Bercaw, Okmulgee; secretary-treasurer, Dr. James T. Nichols, Muskogee.——Tillman County Medical Society, at Frederick, January 27: president, Dr. H. L. Roberts; secretary-treasurer, Dr. Lang A. Mitchell, both of Frederick.——Harmon County Medical Society, organized at Hollis: president, Dr. James E. Jones; secretary-treasurer, Dr. Samuel W. Hopkins, both of Hollis.——Jefferson County Medical Society, at Waurika: president, Dr. T. E. Ashinhurst, Waurika; secretary-treasurer, Dr. Ollie E. Clements, Hastings.——Central Medical Association, at Enid, January 21: president, Dr. Dolph D. McHenry, Oklahoma City; secretary-treasurer, Dr. J. Marvin Cooper, Enid (reelected).——Sequoyah Medical Society: president, Dr. James A. Cheek, Hanson; secretary-treasurer, Dr. Stanley B. Jones, Sallisaw.

PENNSYLVANIA

Anniversary Banquet.—At the twenty-ninth anniversary banquet of the Luzerne Medical Society, held at Wilkes-Barre, January 28, the sixty-ninth birthday anniversary of Dr. George W. Guthrie was also celebrated.

Small-Pox in Erie County.—Under date of February 2 an epidemic of small-pox was reported from the town of North East, 18 miles east of Erie. The town has 3,000 inhabitants and ninety cases of small-pox had occurred. A representative of the State Board of Health was sent to take charge of the situation.

Personal.—Dr. Samuel R. Crothers, Chester, has been appointed a member of the board of trustees of the Eastern Pennsylvania Institution for the Feeble-Minded and Epileptic, Spring City.——Dr. David Hollenbeck, Shamokin, is reported to be seriously ill with pneumonia.——Henry W. Pierson, for seven years chief of the division of biological products of the State Health Department and closely identified with the antitoxin division, has tendered his resignation to Commissioner Dixon.

Philadelphia

Personal.—Dr. John K. Mitchell was elected a director of the Poor Richard Inn Club on February 7.——Dr. Charles H. J. Barnett was appointed a district police surgeon on February 7, to take the place of Dr. Nathan Hornstine.——Drs. Jack Pearl and Joseph McIver qualified in the Civil Service Examination as assistant resident physicians in the Bureau of Charities.

Examination of Delinquents.—All children that may be brought before the Probation Department of the new Municipal Court will be put to a scientific test to ascertain their mental and physical conditions. The system has been carefully worked out by Dr. Walter S. Cornell, Chief Medical School Inspector, with the assistance of Judge James E. Gorman and the chief probation officer. The work at the House of Detention has shown that about 5 per cent. of the children brought there are actually feeble-minded and 9 per cent. are backward mentally as to be termed border-line cases. Under the new system the medical staff will have the assistance of the probation officers, the teachers of the House of Detention and of the Psychologic Laboratory of that institution in the collection of information regarding the intelligence of the children's parents, the language spoken at home, the general home conditions, previous schooling of the child, history of truancy and the grade attained in school. With this information, a combined mental and physical examination is made by the chief medical examiner by which the child's intelligence, emotional peculiarities and physical condition are determined and a diagnosis of mentality is made.

TENNESSEE

A Poster Form of Health Report.—Gallatin, a small city of 2,400 inhabitants, seems to have a live health officer and local health department. The report of the vital and morbidity statistics and of the general health conditions for 1913 is gotten up in the form of a small poster with an appropriate cartoon. It has the striking headline: "Keeping Tab on the Grim Reaper," and presents in graphic and tabulated form the health status of the city and a comparative statement of health conditions for a number of years. The information is presented in a form that should be of great interest to all the people of Gallatin, and contains a plea by the health officer for the cooperation of all the inhabitants in making the health conditions of the place still better.

GENERAL

Induced Pneumothorax in Tuberculosis.—Dr. Martin F. Sloan, superintendent of the Eudowood Sanatorium, Towson, Md., has been engaged as expert to introduce the treatment of pulmonary tuberculosis by induced pneumothorax at the United States Public Health Service Sanatorium, Fort Stanton, N. Mex. Of the two hundred patients under treatment at the sanatorium, all adult males, thirty have been selected as suitable for treatment by this method.

Bequests and Donations.—The following bequests and donations have recently been announced:

Royal Victoria Hospital, Montreal, $500,000; hospitals of the British Isles, $90,000, by the will of Lord Strathcona and Mount Royal.

St. Francis Hospital, Poughkeepsie, N. Y., for building fund, $2,425.

Mount Sinai Hospital, New York City, one-fourth of the residuary estate of Constant Meyer, amounting to about $18,000.

National Temperance Hospital, Chicago, $1,000; Wesley Hospital, Chicago, $2,500, by the will of Sarah E. Lyons, Rochester, Ill.

Detroit Tuberculosis Sanatorium, $12,000, donation by Mrs. Horace E. Dodge.

Harvard University, the greater part of an estate of $500,000 for medical research and "for the promotion of good citizenship under the Republican government," in memory of the testator's father, by the will of Morill Wyman, Cambridge, Mass.

Public Health Administration of Maryland.—The United States Public Health Service has from time to time, as authorized by Congress, published the results of investigations, and analyses of laws and regulations in respect to the powers and duties of state and local health authorities, and laws relating to the control of communicable diseases. In *Public Health Reports*, Jan. 30, 1914, Dr. Carroll Fox of the United States Public Health Service presents an exhaustive

study of the laws relating to public health administration in Maryland. The report keeps in view the relations between state and national health laws and regulations, and is valuable not only as pointing out short-comings in the health regulations in this particular state, but in calling attention to matters of duplication between the laws of the state and national health laws. It also affords a basis for study of the health laws of other states by which similar shortcomings and duplications may be determined. The report occupies eighty pages of this number of the *Public Health Reports*.

Congress on Diseases of Occupation.—A committee has been organized for the purpose of inviting the attention of the medical profession and others interested in the prevention of occupational diseases to the Third International Congress on Diseases of Occupation to be held in Vienna in September, 1914. These congresses, begun in 1906, afford an excellent opportunity to scientists, clinicians and industrial experts to present the results of their research and observations before an international body specially interested in the subject. Among the topics which will be considered at the coming congress are: the physiology and pathology of fatigue; work in hot and damp air; occupational anthrax; pneumoconiosis; injuries caused by electricity; industrial poisons; injuries of hearing caused by industrial pursuits, etc. For membership fees, mail postal money order for $5 to the general secretary of the congress, Dr. Ludwig Teleky, No. 23, Türkenstrasse IX, Vienna, Austria. For further information, address Dr. Alice Hamilton, Secretary, Hull House, Chicago, or Dr. George M. Kober, Vice-Chairman, 1819 Q Street, N.-W., Washington, D. C.

FOREIGN

Deaths in the Profession Abroad.—The cable reports the death of Dr. Karl Voelckers, the well-known ophthalmologist, aged 77, at Kiel, Germany, where he served as professor of ophthalmology from 1866 until recently. He has published numerous works on his specialty, especially on the mechanism of accommodation.——G. Cesari, professor of materia medica at the University of Modena, Italy.

CANADA

Hospital Report.—At the annual meeting of the Verdun Protestant Hospital, Verdun, Quebec, a deficit of $2,526 was reported. The total receipts during 1913 were $159,938, while the expenditures were $162,465. The reason for the deficit is partly the high cost of living and the insufficient per capita allowance by the provincial government of $142. In his twenty-fourth annual report the medical superintendent, Dr. J. W. Thomas Burgess, said that during the year there had been 477 men and 433 women under treatment, a total of 910. There were 247 admissions and of the 151 discharged 74 had recovered, 45 improved and 32 unimproved. There were 92 deaths, leaving in residence at the end of the year 665 patients. There were only eight voluntary admissions. The hospital is for the Protestant insane of the province of Quebec.

Handsome Sanitarium Donation.—Mr. W. J. Gage, Toronto, has donated $100,000 to the National Sanitarium Association. His total gifts to this cause now amount to over a quarter million dollars. The amount is to be added to the King Edward Memorial Fund of $1,000,000 for consumptives, toward which the city of Toronto subscribed $200,000. The city's grant rebuilt the Weston Sanatorium which was destroyed by fire in 1910. Mr. Gage's latest contribution will be used to maintain needy patients in Muskoka. Mr. Gage is practically the founder of the sanatorium movement in Canada. There have been over 7,000 patients cared for by the National Sanitarium Association. At the present time there are about 470 patients in the Muskoka and Weston institutions, most of them being free patients. The plant and equipment are to-day valued at $500,000, and it costs $225,000 annually for maintenance and upkeep.

Dr. Minot Lectures at McGill.—Dr. Charles Sedgewick Minot, professor of anatomy and embryology at Harvard University, recently delivered a lecture to the medical students of McGill University, Montreal. The lecture took the form of a reply to the toast to his health at the thirty-second annual banquet of the faculty and students. Dr. Minot declared that medicine made the highest demands on the mind and character of perhaps any profession, and the fundamental thing that leads to success was what the speaker called a god-like apprehension—the power of understanding things as they really are. The toast to Alma Mater was responded to by President Peterson. Prof. George E. Armstrong replied to the toast to the faculty of medicine, while Prof. John G. Adami gave the toast to the graduating class, emphasizing the value of specializing and urged the students to take up some hobby to which they could turn as a relief from dealing with disease.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 23, 1914.

Personal

At its last session the Académie des Sciences elected Dr. Charles Richet, professor of physiology at the Faculté de médecine de Paris, a member of the section of medicine and surgery to replace the late Dr. Lucas-Championnière. It will be remembered that a Nobel prize was recently awarded Dr. Charles Richet (THE JOURNAL, Nov. 22, 1913, p. 1915).

Institutes of Child Hygiene

Eleven institutes of child hygiene have been opened in the various services of obstetrics and pediatrics in Paris. Instruction in child hygiene will be placed within the reach of all Parisian mothers. Each year, the head of each service in which there is an institute of child hygiene will make a report to the general administration of the public charities on the number of consultations, the number of children examined, the number of pupils following courses, the quantity of milk distributed, etc.

Boric Acid in Foodstuffs

The addition of boric acid to foodstuffs is forbidden by law. Two years ago, when fruit was scarce, large importations of dried and preserved fruits were made from Canada. French merchants declared that these fruits contained boric acid. Qualitative analysis indicated the presence of this antiseptic, and the entrance of Canadian fruit into France was accordingly forbidden. At the protest of Canada an investigation was made. M. Gabriel Bertrand, chief of service at the Pasteur Institute and professor at the Sorbonne, was commissioned to make a quantitative analysis capable of determining the presence of extremely small quantities of boric acid. He, together with M. Agulhon, has just presented to the Académie des Sciences a note on this subject. Since the constant presence of boron in almost all living cells has been unknown hitherto, it has been generally believed that the boric acid found in the ashes of animal or vegetable foodstuffs indicated its artificial introduction as an antiseptic. A mere qualitative analysis is no longer sufficient, for boron or boric acid is found everywhere. The method devised by Bertrand permits a sufficiently close analysis to avoid the confusion of the boric acid contained normally in the ashes of foodstuffs with that which may have been introduced as an antiseptic. In a kilogram of dried fruit, Bertrand and Agulhon found in apricot pulp about 112 mg., in strawberries 56 mg., in cherries 112 mg., in black raisins 228 mg., and in English pears 28 mg. In almost all vegetables, such as carrots, gherkins, Scottish beans, dried onions, turnips, are found quantities of boric acid, from 56 to 112 mg. per dry kilogram.

Antityphoid Vaccination in the Schools

The municipal council of Paris has just requested the administration to collect the number of typhoid cases in each quarter and to publish a table, showing the figures with those of the corresponding school population, to furnish a basis for studying the means of supplying serum to the physicians of the schools most affected.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan. 24, 1914.

Personal

The noted biologist, August Weismann, celebrated his eightieth birthday, January 17.

The Insurance Conflict

The conflict in Königsberg with the local insurance society has been settled by the intervention of the government. On the average $1.80 (7.20 marks) per capita and 25 cents (1 mark) for extra services has been granted to physicians as well as, what is a matter of chief importance, a free choice of physician to the full extent that has prevailed heretofore. The position taken by the medical faculty of the university contributed materially to induce the insurance society to make concessions. The insurance societies had

requested that their members should be treated in the clinics, but the directors of the university clinics and policlinics refused to treat members of the Krankenkassen except in case of imminent danger.

The conflict still continues at the chief remaining foci of disturbance, Brunswick, Elbing and especially Breslau.

Winter Mountain-Climbing

The continually growing disposition to visit the mountains even in winter for the treatment of nervous diseases particularly, has been enhanced by an investigation, a report of which is briefly given by the renowned Berlin physiologist, Professor Zuntz, in the *Zeitschrift für Balneologie*. Zuntz took occasion in the course of the ascent of the highest mountain in the Harz range, the Brocken, by a large party in winter, to carry out some investigations on the effects of mountain-climbing. The thirty-two participants varied in age from 32 to 65 years. A heavy snow-storm considerably increased the exertions connected with the ascent. Three days afterward Zuntz sent to all of these men (who were themselves physicians and hence accustomed to accurate observations) question-blanks in which to record their own observations during and after the expedition. For the interpretation of the reports three age classes were distinguished, namely, those in the fourth, fifth and sixth decades of life. The youngest group was represented by eight men, who for the most part had had insufficient sleep during the previous days and had indulged more freely in alcohol than usual. In spite of this, six of them regarded the ascent as easy and even the two others who found the exertion severe observed no bad after-effects, although in one, shortly before reaching the top, a fainting-spell occurred. The sixteen men in the fifties made still more favorable reports, probably because they had taken better care of themselves in the previous days. Only two considered the ascent difficult, while the majority noted expressly an increase of vigor after the march. Five of the participants were in the sixties, and those accomplished the ascent best who had been trained for it by gymnastic and Alpine exercise. Zuntz himself was the oldest of the mountain-climbers, being 65, and he suffered a light febrile attack after the undertaking because he had to take a rapid journey to Berlin in his wet clothing. He concludes that these experiences afford striking evidence in favor of the value of the mountain climate in winter. The greatest demands were made on the heat-regulating apparatus of the body, and yet the result in the majority of the participants, even though they were not accustomed to such exertion, was entirely advantageous and showed itself in sound sleep and a feeling of refreshment.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Jan. 10, 1914.

Conflict between Practitioners and Clubs Settled

As mentioned in my previous letter (THE JOURNAL, Dec. 27, 1913) the conflict between the organized profession and the Krankenkassen has been in its last stage for several weeks, when it was abruptly settled satisfactorily to the doctors. By intervention of the government, peace was made on the following terms: The clubs—in this country these clubs are compulsory institutions of certain groups of persons earning wages, or otherwise occupied and employed by a person or firm, not by a corporation—have to agree to reappoint all those doctors who have been dismissed or have given notice of resignation within the last year, if these persons wish to accept the post again. Furthermore, two hundred new appointments have to be made within two years. (All these stipulations affect the whole of Lower Austria, with about two and one-half million of inhabitants, and about sixteen hundred doctors.) The payment is calculated per capita in clubs with more than one thousand members, or for a fixed sum, in clubs with fewer members. Each contract between a Krankenkasse and a doctor must be controlled by the medical council of the district; extra medical work (operations, midwifery) to be paid for extra; four weeks' paid leave every year, but the doctor must find a substitute at his own expense during this time. Great difficulties arose in settling the question of dealing with those "blacklegs" who had accepted medical appointments boycotted by the organization during the conflict. The profession demanded the dismissal of these men who had behaved so unethically. But the clubs did not give in. The terms of peace provide that these men may remain, but the posts to which they were appointed will be returned to their previous holders; and the clubs have now to pay not only the regular fees for the appointed old doctors, but also the very heavy "strike fees" of the "blacklegs." Naturally, the clubs will attempt to get rid of these latter men at the very earliest opportunity, and thus the object of the profession will be attained, although a little later, and the punishment for "blacklegs," too. This first significant victory has shown in this country that our profession has ceased to be the object of prey, as it was for a number of years; and the consternation of other unions of clubs is evident by the fact that in Vienna and elsewhere a "voluntary" rectification, i. e., raise of the scale of fees has been offered to the doctors by various Krankenkassen. Meanwhile, the idea of "voluntary choice of doctors for insured members" (*freie Aerztewahl*) is making good headway among our population, and already the members of the pharmaceutical profession have taken it up too.

A New Physiologic Institute

By the generous bequest of 1,500,000 kronen ($300,000) under the will of the late Professor Leegen, a former member of the Vienna medical faculty, the Academy of Sciences of Vienna has obtained means to erect a special institute for physiology. The idea is to devote the institute to scientific research solely; no beginners will be admitted, and the men working there will be appointed as whole-time officers, who may *not* devote their time to any other office (as teachers in universities or hospitals). Furthermore, the academy has obtained also the Vienna Biologic Institute, together with a handsome sum to keep it going, from its founders and present owners. From this institute emanated the sensational biologic discoveries by Drs. Kammerer and Pribram and now, in connection with the above-mentioned "Leegen institute," experimental physiology on a large scale, for purely scientific purposes will be possible in this city, apart from the research going on in the university institute devoted chiefly to the interests of students and for teaching.

The Thirtieth Anniversary of the Death of Gregor Mendel

A few days ago, the Mendelian Society celebrated the thirtieth anniversary of Mendel's death by opening up a new institute devoted to the research of the Mendelian laws of heredity. A modest statue of the scientist was unveiled some time ago in Brünn, where he had spent the latter part of his life and conducted his researches as abbé at the monastery.

Reform in the Medical Service of the Army

The recent discussion in the Austrian Parliament of the budget of the ministry of war proves that our authorities pay more attention now to the requirements of the army medical department. At present we have over 400 fully trained surgeons with at least one year's service in surgical clinics; and no longer than ten years ago, this was suggested as desirable. Many of them have also had several terms in clinics for ear, eye, nose, throat and skin departments. Promotion has been so arranged that after fifteen to twenty years of service, the medical officer of the army will attain the rank of staff-surgeon. At the same time a number of scholarships for different university and hospital clinics have been added to those already in existence, and have been substantially financed. It is the endeavor of the leading authorities to spend 3 per cent. of the grand total of the expenditure on the army for medical purposes, as against 2 per cent. hitherto. The number of male attendants in the sick wards will be augmented, so that sixteen to twenty beds will have the services of one man, while the outfit of the laboratories and the therapeutic departments will be brought up to date, including Roentgen-ray apparatus, filters, sterilization plants, ambulance cars, and last but not least, the number of army doctors will be increased and their position made equal to that of the officers of the rank and file.

Decrease in the Number of Foreign Doctors in Vienna

During the last few months, the number of foreign doctors who used to come here for purposes of study, has decreased very markedly. The drop has affected chiefly the British and Americans, who have left for the holidays to see their families, while newcomers have not arrived, as was formerly the custom. On the other hand, there is an increase in arrivals from Russia and the northern countries (Sweden, Norway, Denmark). Nevertheless, the opportunities for teaching and learning have increased within the last year or two by the finishing of the new clinics and the erection of two new special hospitals. For the month of March, at any rate, a large number of doctors have booked beforehand in several private ambulance departments, so that we look forward to a very busy spring.

Marriages

FRANK JOSEPH WOCHOS, M.D., Kewaunee, Wis., to Miss Nunie Kustermann of Green Bay, Wis., at Chicago, February 4.

MERRILL KIRK LINDSAY, M.D., Topeka, Kan., to Mrs. William Drecksel of Leavenworth, Kan., at Topeka, January 25.

FREDERICK A. STEVENS, M.D., Lake Elmo, Minn., to Miss Gertrude Londigan of Stillwater, Minn., January 24.

THOMAS A. WOODRUFF, M.D., to Mrs. Carrie M. Ogden, both of Chicago, at New London, Conn., February 7.

JOHN F. O'BRIEN, M.D., Taunton, Mass., to Miss Rose Teresa Dillon of Fall River, Mass., January 7.

PETER ALOYES ECK, M.D., to Miss Lillian D. Birkle, both of St. Louis, at Clayton, Mo., January 19.

GEORGE FREDERICK DICK, M.D., Chicago, to GLADYS ROWENA HENRY, M.D., of Evanston, January 27.

CHARLES OSGOOD, M.D., New York City, to Miss Loretto Coleman of Portland, Me., July, 1913.

CLAUDE MELVIN CAMPBELL, M.D., to Miss Rose F. Beihoffer, both of Starbuck, Minn., January 3.

MELVIN JOSIAH MCKAY, M.D., to Miss Florine Losee, both of Lake City, Iowa, January 21.

JOHN F. CHRISTIANSEN, M.D., Manville, Wyo., to Miss Louise Cook of Illinois, recently.

FRANK EDGAR SIMMONS, M.D. to Miss Helen Sloan, both of Canajoharie, N. Y., recently.

Deaths

William Green Ewing, M.D. Vanderbilt University, Nashville, Tenn., 1877; for several years chairman of the Board of Health of Nashville; formerly professor of materia medica and dean of the medical department of the University of Nashville and Vanderbilt University, and president of the faculty of the Medical Department of the University of Tennessee; died at his home in Nashville, January 14, from heart disease, aged 65.

John Avery, M.D. Cleveland University of Medicine and Surgery, 1850; assistant surgeon of the Twenty-First Michigan Volunteer Infantry and brigade surgeon during the Civil War, and since its close a practitioner of Greenville, Mich.; a member of the Fifty-Third and Fifty-Fourth Congresses; for twelve years a member of the State Board of Health; died at his home, January 21, from cerebral hemorrhage, aged 89.

William Howard Ulsh, M.D. University of Pennsylvania, Philadelphia, 1893; assistant surgeon U. S. Navy (retired), with previous service in the line and in the Spanish-American War; aged 42; retired in 1902 for incapacity resulting from an incident of service, and since his retirement a resident of Selinsgrove, Pa.; was instantly killed, January 21, near Kramer, by being crushed under his overturned motor car.

Lewis Y. Grubbs, M.D. Medical College of Ohio, Cincinnati, 1871; a Fellow of the American Medical Association and a pioneer practitioner of Kansas; a veteran of the Civil War; one of the organizers and president of the medical staff of the Jane C. Stormont Hospital, Topeka; died at his home in that city, January 25, from cerebral hemorrhage, aged 72.

Roger De Montluzin, M.D. Tulane University, New Orleans, 1886; surgeon-general of Mississippi on the staff of Governor Foster; vice-president of the Merchants' Bank of Bay St. Louis, and formerly president of the local board of health; for many years disabled by reason of paralysis; died at his home in Bay St. Louis, January 16, aged 51.

Joseph Silas Baer, M.D. Jefferson Medical College, 1888; a Fellow of the American Medical Association; until 1912 a resident of Camden, N. J., gynecologist to Cooper Hospital and once president of the Camden County Medical Society; died at his home in South Pasadena, Cal., January 19, aged 59.

W. A. H. Campbell, M.D. Louisville (Ky.) Medical College, 1888; a member of the Kentucky State Medical Association; of Pikeville; died January 2, from injuries received in falling from his horse over a steep embankment.

John Graham Paschall, M.D. Baylor University, Dallas, Tex., 1906; a member of the State Medical Association of Texas; of Dallas; died in a hospital in San Antonio, January 19, after a surgical operation, aged 33.

James H. P. Baker, M.D., Rush Medical College, 1868; a member and once vice-president of the Missouri State Medical Association; local surgeon at Salisbury for the Wabash System, and formerly president of the Wabash Railway Surgeons' Association; died at his home in Salisbury, Dec. 20, 1913, aged 76.

David Henry Patton, M.D. Northwestern University Medical School, Chicago, 1867; a member of the Oklahoma State Medical Association; for several years a resident of Oklahoma City and Woodward; died at the home of his daughter in Otterbein, Ind., January 17, from heart disease, aged 76.

William L. Smith, M.D. Kentucky School of Medicine, Louisville, 1893; a member of the Missouri State Medical Association; for several terms coroner of Christian County; a practitioner of Sparta until 1908; died at his home in Springfield, January 20, from pneumonia, aged 47.

Pliny Henry Perkins, M.D. Rush Medical College, 1897; a Fellow of the American Medical Association; local surgeon of the Colorado Midland Railway, at Colorado Springs; attending surgeon to St. Francis' Hospital; died in that institution, January 16, from pneumonia, aged 40.

Charles M. Lyon (license, Illinois, 1877); a member of the Illinois State Medical Society; a veteran of the Civil War; for three terms a member of the State Legislature; owner and editor of the *Hamilton County Leader;* died at his home in McLeansboro, January 25, aged 70.

Thomas Richard Garlington, M.D. Jefferson Medical College, 1890; a member of the Medical Association of Georgia; medical director of the State Mutual Life Insurance Company; a resident of Rome; died at the home of his father-in-law near Atlanta, January 21, aged 54.

Augustus Esenwein, M.D. Philadelphia College of Medicine, about 1856; assistant paymaster in the Navy during the Civil War; for many years a practitioner of Reading; died at the home of his son in Philadelphia, January 10, from senile debility, aged 79.

Frank Joseph Labie, M. D. Rush Medical College, 1894; a member of the Illinois State Medical Society, and for twenty years resident surgeon at the St. Mary of Nazareth Hospital, Chicago; died in that institution, February 8, from pneumonia, aged 48.

William Webb, M.D. Jefferson Medical College, 1849; a member of the Missouri State Medical Association and a surgeon in the Confederate service throughout the Civil War; died at his home in St. Louis, January 21, from senile debility, aged 80.

George Oliver Barnes, M.D., Miami Medical College, Cincinnati, 1876; a member of the Indiana State Medical Association, and for many years a member of the Jackson County Board of Health; died at his home in Seymour, January 16, aged 75.

Charles E. Robson, M.D. Kentucky School of Medicine, Louisville, 1903; aged 36; a Fellow of the American Medical Association and health officer of Tenino, Wash., was shot and killed January 13, in Tenino by the husband of a patient.

Wesley Park, M.D. Northwestern University Medical School, Chicago, 1867; Jefferson Medical College, 1873; formerly president of the Park Bank at Fieldon, Ill.; died at his home in Grafton, Ill., January 18, aged 80.

Godfrey R. Bourke, L.R.C.S., Ireland, 1869; a practitioner of New York City, and a member of the Medical Society of the State of New York; died at his summer home in Sayville, L. I., January 23, from pneumonia.

John Augustus Stratton, M.D. University of Michigan, Ann Arbor, 1882; manager of the Stratton Sanitarium, Newman, Cal.; died at his home, January 15, from disease of the liver, aged 56.

William F. Osborn, M.D. Rush Medical College, 1860; for one term a member of the Kansas Legislature from Douglas County; died at his home in Baldwin, January 21, aged 83.

George W. Davis, M.D. Howard University, Washington, D. C., 1907; anesthetist to the Freedmen's Hospital, Washington; died at his home in that city, January 14, aged 30.

Matthew Winfield Smith, M.D. Bellevue Hospital Medical College, 1873; died at his home in Brooklyn, N. Y., January 9, aged 60.

John Albion Soule (license, Massachusetts, years of practice, 1894) died at his home in Hyde Park, Dec. 10, 1913, aged 72.

William J. Hodges, M.D. Atlanta (Ga.) Medical College, 1874; died at his home in Atlanta, January 7, aged 65.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

DR. BURTON TAKES THE JOURNAL TO TASK

To the Editor:—I read with much interest the article in your excellent journal published December 13, on the action of vaccines and serums, and I wish to ask in good faith a question. The article seems to be directed toward such firms as Parke, Davis and Co. and the Sherman Vaccine Laboratory of this city and it aims to discredit their work and discourage the use of mixed vaccines and Phylacogens. In the same number of your journal you are carrying extensive advertisements from both of these companies and we, as physicians, take this as a criterion that you sanction their use.

We look to THE JOURNAL to guide us through ethical channels of practice, and we believe hat if an advertisement is good enough to be printed in THE JOURNAL, the products thus advertised are good enough for us to use.

I am voicing the sentiments of a number of physicians I have spoken to about this, and I have no connection whatever with either of the above named firms, although they are both located in Detroit. My question is, then, if you discredit the use of their preparations, why do you advertise them in your own paper?

C. H. BURTON, M.D., Detroit, Mich.

The article referred to by Dr. Burton appearing in THE JOURNAL, Dec. 13, 1913, was a paper on "The Scientific Basis for Vaccine Therapy," by Richard M. Pearce, M.D., of Philadelphia. THE JOURNAL does not hold itself sponsor for the views expressed by its contributors, although in the present instance Dr. Pearce's paper reflects the attitude of THE JOURNAL on the subject with which it deals.

Advertisements of proprietary remedies are accepted by THE JOURNAL only after the products have been investigated by the Council on Pharmacy and Chemistry and accepted for inclusion in New and Nonofficial Remedies. The Phylacogens have never been accepted and have never been advertised in THE JOURNAL, although THE JOURNAL has at various times criticized these products. Certain of the mixed vaccines were accepted for New and Nonofficial Remedies, and such products have been advertised in THE JOURNAL. Last year, after consulting various authorities, the Council decided to apply Rule 10 (which bars unscientific, shotgun mixtures) to vaccine preparations. Under the Council's rules, it was obliged to retain for a period those mixed vaccines which had already been accepted. It decided, however, to accept no further mixtures of this kind. New and Nonofficial Remedies, 1913, explains the Council's actions in this particular thus:

"Of recent years prophylaxis and therapy by bacterial vaccines have been widely employed. While the subject was still in the experimental stage, mixtures of vaccine, so-called 'mixed' vaccines, were admitted to N. N. R. by the Council. With increasing experience, however, it has been found inadvisable to continue this form of recognition. Those at present included will be dropped at the expiration of three years from the time of their admission and none will be admitted or retained unless justification for their inclusion can be found."

We are glad to learn that Dr. Burton has such a high opinion of THE JOURNAL. He will doubtless find much interest in the issues of May 18, 1912, page 1517, and Oct. 12, 1912, page 1391. There, our readers will remember, were discussed Dr. Burton's exploits, first as an associate of the notorious "cancer cure" fakers, "Drs. Mixer," later in exploiting a "cure" for locomotor ataxia. A physician who had read THE JOURNAL'S exposé called Burton's attention to it. Burton replied that he had intended suing THE JOURNAL for slander, "but on looking them up I found that they are not worth anything, so a judgment would do me no good."[1] In view of the foregoing, it gives us pleasure to learn that Dr. Burton is constrained to "look to THE JOURNAL to guide us through ethical channels of practice"!

1. Burton's activities will be found described in "Nostrums and Quackery," second edition, page 689.

PYO-ATOXIN

"*To the Editor:*—I am sending you a sample of a proprietary preparation that for the past two or three years has been largely retailed in the South and Southwest as a new combination that liberates larger amounts of formaldehyd, etc., in the genito-urinary tract than any known agent, that it is a methylene-formate, entirely new, etc.

"I asked the representative why he had not submitted a specimen to the Council, and his reply was that like Wyeth and others they did not get a fair report, or something to this effect. My reasons for trying to find the truth for their claims is that quite a number of general practitioners have asked me regarding this Pyo-Atoxin.

"W. P. DEY, M.D., Jacksonville, Fla."

Dr. Dey sent with the foregoing letter a box of Pyo-Atoxin which bore this label:

Pyo-Atoxin
Reg. in U. S. Pat. Office
(Capsules)
(Pheno-Methylene-Formate)
"Hurley"
An Antitoxic Agent Indicated in
Gonorrhoea, Cystitis, Pyelitis and
Bacteriuric Conditions.
DOSE: One capsule four to six times daily,
Followed by large glass of water.
Guaranteed by
H. O. Hurley,
Manufacturing Pharmacist,
Louisville, Ky.
Under the Food and Drugs Act, June 30, 1906
Serial No. 1710.

The pseudoscientific synonym "pheno-methylene-formate" carries the idea that Pyo-Atoxin is a definite chemical substance. It is unnecessary to say that the term "pheno-methylene-formate" is a meaningless one and its use reminds one of those preparations exploited seven or eight years ago before the Council began to expose these mixtures masquerading as definite chemical compounds.

The chemical laboratory was asked to investigate this preparation and the following is a report of the chemists:

"The box contained thirty gelatin capsules coated with some black substance giving them the appearance of some of the popular gonorrhea nostrums. When the capsules were opened they were found to contain a powder—about 0.35 gm. or 5 grains per capsule—composed of large white or colorless crystals mixed with a smaller amount of a fine dark powder. The crystals when separated out and dissolved yielded the characteristic tests for hexamethylenamin. A solution of the entire capsule content was deep blue and responded to the U. S. P. tests for methylene blue.

"As a result of these and other tests it was concluded that Pyo-Atoxin consisted essentially of two pharmacopeial drugs—hexamethylenamin and methylene blue. A quantitative determination of the constituents was considered unnecessary. From its general appearance and properties, however, the hexamethylenamin probably constitutes approximately from 60 to 80 per cent. of the preparation."

It thus appears that the capsules contain a mixture consisting essentially of two well-known official substances, the value and particularly the limitations of which should be known by physicians by this time. This nostrum is simply another example of how physicians are being humbugged.

CLEAN ADVERTISING

It is individual effort that counts for most in every movement for better things—socially, economically or politically. Realizing this, THE JOURNAL repeatedly urges physicians who write regarding various fraudulent advertisements to enter their individual, personal protest against the continuation of such advertisements.

Within the past few months THE JOURNAL has had brought to its attention a good example of what may be accomplished by personal effort in cleaning up the advertising pages of a fraternal publication. The *Royal Neighbor*, official organ of a fraternal organization, until comparatively recently, carried numerous fraudulent medical advertisements. Fake liquor cures, rheumatism cures, tapeworm expellers, tobacco-

habit cures, asthma and hay-fever cures, epilepsy cures, etc., disgraced its advertising pages. These called forth protests from Dr. E. A. Hall, Henry, Ill., who addressed letters to the official physicians of the fraternal order that the *Royal Neighbor* represents, objecting to such advertisements. These letters in turn reached the advertising manager, and it was not long before the board of managers took the matter up for consideration and decided to eliminate this class of advertising from their official organ. By December, 1913, the *Royal Neighbor* came to its readers clean. There is no doubt that the same results can be duplicated in similar cases. Whether they are will depend on the amount of active work done by individuals interested in the question of clean advertising.

PIORKOWSKI LABORATORIES NOT LICENSED

Through the Jan. 30, 1914, number of *Public Health Reports*, the United States Public Health Service announces that statements which seem to emanate from the so-called Piorkowski laboratories in various parts of the country, to the effect that these laboratories have been licensed by the Public Health Service, are incorrect. The article states that after inspection of the Piorkowski Laboratories in Berlin, Germany, by a representative of the United States Treasury Department, that department has refused a license for the importation and sale of their products in interstate traffic.

Correspondence

Tuberculosis is Infectious!

To the Editor:—I desire publicly to correct a serious misrepresentation of my views on infection in tuberculosis that has recently been given wide circulation by a Christian Science journal.

By a *partial* quotation of some conclusions that had summed up the gist of a lecture delivered in Baltimore last May, the above-mentioned article places me in the position of declaring tuberculosis *not* infectious! Nowhere in my conclusions is such a statement made. On the contrary, it was distinctly stated that "childhood is the time of infection" as contrasted with the higher resistance of adults, whose danger of infection was explained as very slight in comparison. It hardly seems necessary to deny such palpable abuse of the truth in this, the twentieth century.

Were it not for the wide-spread use of this article (which was based on an editorial in THE JOURNAL of January 3 in which you kindly and fairly commented on the lecture) as a protest against hospital care of the tuberculous, I would bear the unpleasant notoriety in silence.

Not only is tuberculosis infectious, but I firmly believe that the isolation and humane care of the advanced tuberculous patients in hospitals, sanatoriums or homes is the most important and only sure way of preventing infection.

EDWARD R. BALDWIN, M.D., Saranac Lake, N. Y.

Stethophone, Not Stethoscope

To the Editor:—Nonchalantly to say that one is wrong is one thing, but to be correct in saying so is fortunately another.

In THE JOURNAL, Dec. 20, 1913, p. 2260, I offered the word "stethophone" as being a better word than "stethoscope." I gave my reasons for the preference and I thought that I had perused my dictionaries sufficiently to be correct in the matter; but in THE JOURNAL, Jan. 3, 1914, p. 57, Dr. A. Rose took exceptions to the word, saying that my dictionary was wrong. He also criticized my use of such hybrid terms as "auriscope" and "dictaphone." As to this, I should like to say that I used these terms to make my point clear: that instruments by the use of which we hear should end in the suffix "phone," while instruments by the use of which we see should end in the suffix "scope." It is not my purpose, however, to correct all the wrongs in the medical dictionary. Like Maeterlinck's unborn child, I should find myself with a big job on hand.

It is only too true that our onomatology has not as yet been sufficiently refined.

As to the propriety of the word "stethophone," the following letter is self-explanatory. I have referred it to the Nelsons, who speak authoritatively on such matters.

LETTER FROM NELSON & SONS

Dear Sir:—In reply to your inquiry as to the words "stethoscope" and "stethophone," we think that your criticism is exceedingly good, and that "stethophone," by both analogy and consistency, is by far the better word to denote the instrument used for auscultation.

The following definitions are given in the Century Dictionary:

Stethoscope [Greek, *στῆθος*, the breast, + *σκοπεῖν*, view]. An instrument used in auscultation to convey the sounds from the chest or other part of the patient to the ear of the observer.

Stethoscope (verb). To examine by means of a stethoscope. *Lancet*, 1890, ii, 1267.—Century Dictionary, 1913 edition.

Stethendoscope [Greek, *στῆθος*, the breast, + *ἔνδον* within, + *σκοπεῖν*, view]. A modified form of fluoroscope employed in examination of the chest by means of x-rays.—Supplement to Century Dictionary.

The last-named word, of recent origin, indicating as it does an instrument strictly for ocular use, seems appropriately formed, and in striking contrast to the word "stethoscope."

Under the Greek verb *σκοπέω* we find the following definitions in Liddell and Scott's Greek-English Lexicon: (1) *to look at* or *after* a thing; *to behold, contemplate; look out, watch;* (2) metaph. *to look to, consider, examine, to look to one's* own affairs; (3) *to look out for;* (4) *to inquire, learn;* also, certain forms carry the idea of *deliberate consideration, universal contemplation.*

The primary meaning of the word, however, is evidently that of inspection, view or examination by means of the *eyes*, no suggestion of sound entering into any of its forms. For instance, there are the words *σκοπή, σκοπιά*, a *lookout-place*, a *watch-tower*, a *mountain-peak; σκοπός, one that watches*, a *lookout-man*, a *watcher, watchman*, "stationed in some high place (*σκοπιά*) to overlook a country," etc., all denoting the use of the faculty of vision. Hence, we would say that, although, as you say, general usage has permitted the employment of the word "stethoscope" for the instrument used in auscultation, the strictly correct name of such an instrument would be the "stethophone."

In the Standard Dictionary (edition of 1913) is found the word "stethophonometer," thus defined: "a stethoscope with an adjustable slit for measuring the intensity of sounds heard on auscultation." Why "stetho*scope*" and "stetho*phonometer*"? Would it not be more consistent and more euphonious to use a *stethophone* in connection with a *stethophonometer*?

THOMAS NELSON & SONS, New York.

So far as I am concerned, this is a closed matter. Stethophone is the proper name for the instrument. Those of smug conventionality may use the time-honored term if they wish.

JOSEPH H. BARACH, M.D., Pittsburgh, Pa.

Blood Transfusion in 1492

To the Editor:—Though a Pepys enthusiast, in my perusal of the "Diary" I had not seen the account of the transfusion of blood cited by Dr. Campbell (THE JOURNAL, Jan. 10, 1914, p. 147).

The transfusion of blood, not only experimentally from animal to animal but also therapeutically from man to man, had been attempted long before 1666.

In those books which I have immediately available, to Jean Baptiste Denys of Montpellier, physician to Louis XIV, is usually attributed the honor of having performed the first transfusion of blood in man. He injected, in June, 1667, the blood of a calf or lamb into the veins of a young man dying from repeated venesection. The patient survived and apparently recovered his health. Violent controversies arose regarding the operation, and it was decreed that "for the future no transfusion should be made on the human body but by the approbation of the physicians of the Parisian Faculty."

This official disapprobation and the heavy mortality incident to the practice led to its discontinuance.

One hundred and seventy-five years earlier, in April, 1492, the first transfusion of which we have accurate record occurred in an attempt to prolong the life of Pope Innocent VIII.

The following quotation from Villari's "Life of Savonarola" is self-explanatory:

"The vital powers of Innocent VIII rapidly gave way; he had for some time fallen into a kind of somnolency, which was sometimes so profound that the whole court believed him to be dead. All means to awaken the exhausted vitality had been resorted to in vain, when a Jew doctor proposed to do so by the transfusion, by a new instrument, of the blood of a young person—an experiment which had hitherto only been made on animals.

"Accordingly the blood of the decrepit old pontiff was passed into the veins of a youth, whose blood was transferred into those of the old man. The experiment was tried three times, and at the cost of the lives of three boys, probably from air getting into their veins, but without any effect to save that of the pope."

Previous to this, vague references to such an operation had been made from time to time at least as far back as the Augustan era, both in medical and in lay literature, but I can find no record of any earlier account which approximates the preceding in clarity.

Perhaps some other readers of THE JOURNAL may enlighten me. J. L. JOUGHIN, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"THE ANATOMIST" OF REMBRANDT

To the Editor:—In my latest copy of THE JOUNAL, I observe under Queries and Minor Notes—to me an always interesting department—an article on Rembrandt's "Lesson in Anatomy." I am one of the many hundreds or thousands of medical men whose sanctum is adorned with a copy of this famous picture, and consequently your account of the origin and vicissitudes of the original is very interesting. There are two circumstances connected with this picture, neither of them historical, to which I should like to refer.

The first is the fact that although the "Lesson in Anatomy" is one of the famous pictures of the world and a favorite with doctors, I have never heard any patient admire it. On the contrary, the only expression of opinion I have heard from the self-appointed connoisseurs who have criticized my copy has been based on abhorrence and disgust of the subject, together with wonder and surprise at my keeping a picture of a horrible "surgical operation" in my office.

The other fact is this: Is not the right arm of the cadaver in the picture, greatly, and in view of the reputation of the artist, egregiously foreshortened? Would a schoolboy drawing a picture of a man with his arm close to his side make the tips of the fingers stop above the hip-joint, unless he intended to represent a deformed upper extremity?

In Rembrandt's picture it will be noticed that the tips of the fingers of the right hand reach only to the hip-joint instead of to the middle of the thigh as they should, while on the left side, the arm of which is being dissected by Dr. Tulp for the edification of his Dutch colleagues, the extremity is represented as of normal length. W. M. BARTON, M.D., Washington, D. C.

ACTION OF PIGMENT IN INDELIBLE PENCILS

To the Editor:—In connection with this subject, which was referred to in THE JOURNAL, Jan. 24, 1914, p. 315, I wish to call attention to some work done in Basel, under Carl Mellinger by Dr. Alfred Vogt, in continuation of work done two years previously by Dr. A. Gräflin.

Vogt comes to the following conclusions:

1. The artificial anilin dyes act according to their chemical composition differently on the ocular conjunctiva. From 5 to 10 mg. of the acid, neutral, or "Beizen" colors, as well as those insoluble in water, produce no irritation, or hardly any, on the conjunctival sac of the rabbit. All basic dyes in the same quantity produce serious inflammations, which may progress to panophthalmitis. [Methyl violet, the substance commonly used in indelible pencils, belongs to the basic dyes.—ED.]

2. The toxicity of the basic colors varies in degree. It increases with the basicity, and depends also on other chemical properties, but seems to be independent of the mineral acid of the color-base. The danger increases also with the solubility in the ocular fluid.

3. Experiments on rabbits demonstrate that washing out of the conjunctival sac with a tannin solution of from 5 to 10 per cent. prevents the dangerous effects occurring, while those cases in which the conjunctival sac has been irrigated with water, solutions of sodium chlorid, boric acid, sublimate, and sodium bicarbonate under the same conditions, progress rather more seriously than when left alone.

Reference may be made to the following articles:

Alfred Vogt: Weitere experimentelle und klinische Untersuchungen über dem schädlichen Einfluss von künstlichen Anilinfarben auf das Auge, Inaugural Dissertation, 1905, and *Ztschr. f. Augenh.*, xiii.

Alfred Vogt: Experimentelle Untersuchungen über die Bedeutung der chemischen Eigenschaften der basischen Anilinfarbstoffen für deren schädliche Wirkung auf Augenschleimhaut, *Ztschr. f. Augenh.*, xv.

Alfred Vogt: Recherches cliniques et expérimentales sur l'action des couleurs artificielles d'aniline sur la conjonctive, *Arch. d'ophthal.*, April, 1906.

The articles mention also the literature.

EDMOND E. BLAAUW, M.D., Buffalo, N. Y.

ACIDOSIS—ACID INTOXICATION—CYCLIC VOMITING

To the Editor:—Have epidemics of acid intoxication of children (cyclic vomiting) been reported recently at Concord, N. H., and Birmingham, Ala.? If so, in what publications can I find records of the same? E. F. C., Pennsylvania.

ANSWER.—The newspapers have referred to an "epidemic" of "acidosis" at Concord during December and January with 100 cases and 11 deaths. The secretary of the State Board of Health informs us that there has been an unusual amount of sickness among young children in Concord during the winter, but only a small part of it could be classed under the head of acidosis. In a large number of cases, however, acetone was found in the urine, and they should be classed rather as acetonuria. There have been seven deaths in Concord from acidosis. No unusual number of cases of this affection have been reported from Birmingham, Ala. At this season of the year, when influenza and catarrhal conditions of the nasopharynx are prevalent, acid intoxications are frequently observed in children, and such conditions have been the most frequent exciting cause or most frequent accompaniment of the cases of acid intoxication in both Concord and Birmingham. The affection is a disturbance of metabolism and therefore could not be spoken of correctly as epidemic. Articles on acidosis, acid intoxication and cyclic vomiting have been published as follows:

Parke, Thomas D.: Symptom-Complex of a Series of Intestinal Cases with Pathologic Findings, THE JOURNAL A. M. A., Nov. 30, 1907, p. 827; Further Report on Ileocolitis Complicated by Acidosis, THE JOURNAL A. M. A., Sept. 17, 1910, p. 991.

Sedgwick, J. P.: Studies of Recurrent or Periodic Vomiting, *Am. Jour. Dis. Child.*, April, 1912, p. 209.

Abt, I. A.: Acid Intoxication, *Am. Jour. Med. Sc.*, January, 1914.

Jenkins, T. W.: Acidosis, *Albany Med. Ann.*, December, 1913.

A CLEAN SURGICAL JOURNAL

To the Editor:—In addition to THE JOURNAL, I wish to have the best surgical journal I can get. I like the *Annals of Surgery*, and have but one objection to it: I do not care to help advertise the peculiar class of drugs and appliances to which the publishers of the *Annals* give space. Otherwise it seems to be a most excellent periodical. Please inform me if there is a better that has not this objectionable feature. I am getting the *Southern Medical Journal*. It is the cleanest medical publication I have ever seen, aside from our Association journal. What I want in addition to what I now have is the best surgical journal published, suited to the practitioner in the small town, who does such surgery as comes to him, turning nothing away that he can do.

S. H. LANDRUM, M.D., Altus, Okla.

ANSWER.—The only surgical journal that follows the Council on Pharmacy and Chemistry in censoring its advertisements of proprietary remedies is *Surgery, Gynecology and Obstetrics*. This is published at 31 North State Street, Chicago; the annual subscription price is $10—and it is worth it.

CLEANING SLIDES AND COVERS

To the Editor:—Please give the best method for clearing old microscope slides and cover-glasses, to remove oil, balsam, old blood-smears, etc. QUIEN.

ANSWER.—Following is the method given by Lee in "The Microtomist's Vade-Mecum":

"Cleaning Slides and Covers: New ones should first be soaked in one of the following liquids: strong sulphuric, hydrochloric or nitric acid, or aqua regia, or a mixture of an ounce each of sulphuric acid and bichromate of potash with from 8 to 12 ounces of water, then washed first with water and lastly with alcohol, and dried with a clean cloth.

"For used ones, if a balsam mount, warm, push the cover into a vessel with xylol or other solvent of the mount, and put

the slide into another vessel with the same, leave for a few days, and then put into strong alcohol. If this is not sufficient, treat as for new ones. Some persons boil in compound solution of cresol, which I do not find efficacious."

ARTICLES ON DISEASES OF THE JAW

To the Editor:—Please refer me to the most recent literature on diseases and injuries of the jaws.

M.D., Nashville, Tenn.

ANSWER.—Following is a list of references to literature on this subject:

Gobell, R.: Correction of Deformity of Lower Jaw, *Deutsch. Ztschr. f. Chir.*, June, 1913.
D'Agata, G.: Sporothrix Process in Upper Jaw, *Berl. klin. Wchnschr.*, Sept. 22, 1913.
Brown, G. V. I.: Pathologic and Therapeutic Possibilities of Upper Maxillary Contraction and Expansion, *Wisconsin Med. Jour.*, October, 1913.
Leonhard, J. v. d. H.: Simple Prothesis after Removal of Great Part of Lower Jaw, *Jour. Laryngol., Rhinol. and Otol.*, November, 1913.
Faucett, P. H.: Multilocular Cystoma of the Lower Jaw, THE JOURNAL, April 19, 1913, p. 1248.
Smith, J. F.: Osteitis Fibrosa Cystica of the Lower Jaw, THE JOURNAL, Nov. 1, 1913, p. 1657.
Murphy, J. B.: Use of Palate Mucous Membrane Flaps in Ankylosis of the Jaw, due to Cicatricial Formations in the Cheek, THE JOURNAL, July 26, 1913, p. 245.
Golden, W.: Actinomycosis of Lower Jaw, *West Virginia Med. Jour.*, April, 1913.
Goto, S.: Teratoma of Upper Jaw, *Arch f. klin. Chir.*, 1913, c, No. 4.
Frenzel, A.: Treatment of Fractured Jaw, *Deutsch. med. Wchnschr.*, March 20, 1913.
Schottlander, E.: Sarcoma of Upper Jaw, *Deutsch. Ztschr. f. Chir.*, February, 1913.
Pictier, H., and Oser, E. G.: First Prothesis After Resection of Lower Jaw, *Arch. f. klin. Chir.*, 1913, cxix, No. 4.
Hagedorn: Treatment of Fracture of Upper Jaw, *Deutsch. med. Wchnschr.*, Dec. 12, 1912.
Kirmisson, E.: Ankylosis of the Jaw, *Bull. de l'Acad. de méd.*, Feb. 11, 1913.
Alessandri, R., and Chiavaro: Resection of Three-Fourths of Jaw and Mode of Repair, *Policlinico*, Rome, Feb. 23, 1913.
Beach, S. J.: Evils Caused by Poor Development of Upper Jaw, *Maine Med. Jour.*, April, 1913.
Kuhn, F.: Technic for Removal of Cancer of Upper Jaw, *Deutsch. med. Wchnschr.*, May 15, 1913.

NAPOLEON'S SURGEON-GENERAL

To the Editor:—In THE JOURNAL, Jan. 10, 1914, p. 149, under Queries and Minor Notes, there is a reference to the "Works of Napoleon's Surgeon-General." I have always been under the impression that my great-grandfather, Auguste Baudry, was chief surgeon on Napoleon's staff. Have you ever heard of such a person or can you put me in touch with the proper persons to secure such information? We have three medals from Napoleon, two of the crosses of the Legion of Honor, one won during the plague in Egypt.

MARY M. MOORE, Baltimore, Md.

ANSWER.—We have made a careful search for Auguste Baudry and have not been able to find any reference to him anywhere, even in the British Museum Catalogue or in Larrey's memoirs of the Egyptian campaign. Larrey became surgeon-in-chief of the Consular Guard and its hospital in 1804, and in 1805 Napoleon nominated him *inspecteur du service de santé des armées*, which is the present equivalent of the surgeon-general in the French army. Baudry may very likely have been a chief surgeon on the staff, which may have been some merely official position, like that of any medical officer designated to serve on the general staff of our army in time of war for special reasons. The best way in which this information could be obtained would be to write directly to the Département de la guerre, Paris, France, stating the facts, and the department would undoubtedly comply with the request for information.

REFERENCES TO DISEASES OF THE CAT

To the Editor:—I am anxious to obtain all possible information bearing on the transmission of contagious and infectious diseases by the domestic cat, and also the diseases to which it is commonly susceptible and their possible relation to man.

WARREN L. DUFFIELD, M.D., Brooklyn, N. Y.

ANSWER.—Following is a list of references to literature on this subject:

Hill, J. W.: Diseases of the Cat, New York, William R. Jenkins Company, 1901, $1.25.
Hobday, F. T. G.: Surgical Diseases of the Dog and Cat, Ed. 2, Chicago Medical Book Company, 1906, $3.25.
Hutyra, F., and Marek, J.: Special Pathology and Therapeutics of the Diseases of Domestic Animals, 2 volumes, Alexander Eger, 132 West Lake Street, Chicago, 1912, $7.50.
Fleming, G.: Contagious Diseases of Animals, New York, William R. Jenkins Company, $0.25.
M'Gowan, J. P.: An Epidemic Among Cats, Supervening and Simulating Distemper, *Jour. Path. and Bacteriol.*, 1911-1912, xvi, 257.
Ruppert, F.: Bipolare Bakterien als Erreger einer Katzenseuche, *Deutsch. tierärztl. Wchnschr.*, 1912, xx, 441.
Haring, C. M.: Diseases of Domesticated Animals Affecting the Public Health in Alameda County, *California State Jour. Med.*, 1911, ix, 146.
Skrzynski, Z.: Reponse au travail de Gaertner: Eine neue Katzenseuche, *Centralbl. f. Bakteriol.*, 1 Abt., 1910, llv, Orig., p. 451.
Gaertner: Eine neue Katzenseuche, *Centralbl. f. Bakteriol.*, 1 Abt., 1909, li, Orig., 232.
Skrzynski, Z.: Nouveau microbe pathogénique pour les chats, *Ann. de l'Inst. Pasteur*, 1908, xxii, 682.
Moore, V. A.: The Pathology and Differential Diagnosis of Infectious Diseases of Animals, Ithaca, N. Y., Taylor & Carpenter, $4.

PROFESSIONAL SERVICES OF PHYSICIANS TO ONE ANOTHER

To the Editor:—Please answer these questions:

1. Dr. A. treats the child of Dr. B. and sends B a bill for services rendered. B is uncertain whether or not A knows that B is a doctor of medicine. Shall B pay the bill without comment, or shall B tell A that he (B) is a physician?

2. Under the same conditions except that B undoubtedly knows A has knowledge that B is a doctor of medicine, shall B pay without comment, or accompany the payment with a sharp criticism, or simply disregard the statement?

This situation under the conditions stated, and various other combinations of these conditions, frequently presents itself.

P. M. D.

ANSWER.—1. B should pay the bill without comment.

2. Notwithstanding the added condition, B should pay without comment.

Article II, Chapter II of the "Principles of Medical Ethics" reads:

SECTION 1.—Experience teaches that it is unwise for a physician to treat members of his own family or himself. Consequently, a physician should always cheerfully and gratuitously respond with his professional services to the call of any physician practicing in his vicinity, or of the immediate family dependents of physicians.

SEC. 2.—When a physician from a distance is called on to advise another physician or one of his own family dependents, and the physician to whom the service is rendered is in easy financial circumstances, a compensation that will at least meet the traveling-expenses of the visiting physician should be proffered. When such a service requires an absence from the accustomed field of professional work of the visitor that might reasonably be expected to entail a pecuniary loss, such loss should, in part at least, be provided for in the compensation offered.

An adaptation of these two sections answers the question our correspondent propounds: Dr. A renders professional services to one of Dr. B's family dependents; define A's and B's conduct with regard to A's service and B's acceptance of it.

First. B has no "right" to A's professional services unless B is engaged in the practice of medicine in A's vicinity. If B gains his livelihood from a source other than the practice of medicine, he should not expect A's gratuitous professional services.

Second. If A fails to respond with "gratuitous" service to a dependent member of B's family, A sins against the ideals of the profession rather than against B, the individual physician practicing in A's vicinity. It is the profession at large, rather than B, who should call A to account for his neglect of the opportunity presented by B's necessity.

TREATMENT OF HYDROFLUORIC ACID BURNS

To the Editor:—What is the best treatment of burns made by hydrofluoric acid?

C. C. DUBOIS, M.D., Warsaw, Ind.

ANSWER.—The burns should be washed with diluted milk of magnesia. Ammonia is too caustic. Reference may be made to the following:

Desoignes: *Am. Jour. Pharm.*, October, 1890, p. 494, from *Répert. de pharm.*, Sept. 10, 1890; abstr., *Proc. Am. Pharm. Assn.*, 1891, xxxix, 494.
Branson, Laura H.: Physical Injuries as Results of Hydrofluoric Acid, THE JOURNAL, Aug. 10, 1912, p. 436.

HEX-A-LITH

To the Editor:—The Smith-Dorsey Company, of Lincoln, Neb., puts out a preparation under the title of Hex-a-lith, which is a combination of hexamethylenamin with lithium citrate. What is the physiologic effect of such a combination? Theoretically, the lithium citrate should have the tendency to render the urine alkaline, and we have been taught that hexamethylenamin will act only in an acid medium.

FRED W. PHIFER, M.D., Wheatland, Wyo.

ANSWER.—The lithium citrate would render the urine alkaline and defeat the object of administering hexamethylenamin.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

WISCONSIN'S EXPERIMENT IN MARRIAGE REGULATION

Probably no law of recent enactment has caused the amount of general discussion in the press that has been aroused by the law adopted at the last session of the Wisconsin legislature, requiring a physician's certificate of immunity from venereal disease on the part of the groom as a preliminary to the issuing of a marriage license. Although the law was enacted early in the year, but little attention was apparently paid to it until the time of its enforcement was near at hand. It went into effect Jan. 1, 1914. Apparently neither the medical profession nor the public realized its significance until the form of the medical certificate was brought to the attention of physicians. Then it at once became evident that the law, like so much of our legislation, had been hurriedly drafted and was loose in construction, vague in meaning and capable of various interpretations. It provided that each male applicant for a marriage license should present a certificate in the form of an affidavit from a reputable physician, stating that the latter had subjected the applicant to "all of the known and recognized tests known to medical science," and had found him free from venereal infection. For making these examinations and executing the certificate the physician was allowed a maximum compensation of $3.

The united protest which arose from Wisconsin physicians was, in reality, a protest against a law which physicians knew to be practically impossible. Unfortunately, these objections were at first placed before the public in such a way as to carry the impression that the opposition of physicians was entirely due to the amount of the fee. The first editorial comments which appeared in the newspapers, both in Wisconsin and throughout the country, were evidently hastily written, without a knowledge of the facts, and were largely criticisms of the attitude taken by physicians. It is only fair to say that practically all of the newspapers, after the real facts became known, withdrew their criticisms and adopted the same position as that taken by the medical profession.

While in some cases individual physicians or medical organizations acted hastily or spoke unwisely or intemperately, the bulk of the Wisconsin profession acted admirably, simply reiterating at every opportunity that the law required physicians to swear to a statement of facts, the acquisition of which would require repeated examinations, for weeks, if not months, the possession of an elaborate and expensive equipment and a technical training possessed only by a few. From a scientific point of view, under present conditions the enforcement of such a law is impossible, regardless of the amount of the fee. The average physician cannot make a Wassermann test, even if he were provided with the necessary equipment.

As announced in our editorial columns,[1] the law was declared unconstitutional by the first judge before whom a case involving it was taken. While this decision of the lower court is subject to the review of the appellate and supreme courts, the inequity of the law is such as to make it practically certain that it will be held void by the court of last resort.

This, in brief, is the history of one of the most instructive experiments in advanced legislation that the country has seen for some time. The good effect of Wisconsin's experience is manifest in other states. It is safe to say that neither this winter nor next will see the flood of absurd and impracticable bills on all public health topics with which our legislatures were deluged last winter. The general public, the law-making bodies, the sociologists and the medical profession must all learn that while there is a legitimate field for constructive public health legislation, there are also definite limits for such efforts and that there are many subjects which cannot be regulated by law, however desirable such regulation may appear. It is highly desirable that future wives and mothers should be protected against marriage with diseased men. When we have reached a point in public enlightenment at which public sentiment demands such protection, it will then be necessary to devise some way in which the state can secure such information through properly conducted official channels. To attempt to establish, by law, a standard which is scientifically impossible on a basis of compensation which is economically ridiculous can only bring such efforts into disrepute and result in failure.

Following the enactment of the law, criticisms of physicians in the newspapers varied all the way from the comment of the Racine (Wis.) *Times*, which under the title "Greed and Doctors" made the startling statement that any doctor in the state could afford "to spare the few minutes required to make the cursory examination without any fee at all, and that the $3 is fair pay, everything considered," to the Los Angeles *Times*, which said: "The average doctor is a busy man. . . . To satisfy the needs of the eugenic examination it would be necessary to make in each case an examination of all the organs and to do it well; otherwise the aim of the eugenists would be defeated and the whole thing would be a farce. It is preposterous to expect reputable physicians to make such a series of tests for $3. Besides, they have really sick people to look after."

It soon became evident to every one interested that the difficulty was not alone in the size of the fee, but that other serious objections must be considered. After enumerating the necessary steps of an examination which would enable a physician to make affidavit to the condition of the applicant, the New York *Tribune* expresses the fear "that the work will fall into the hands of unscrupulous practitioners, whose examinations will not comply with the legal requirements and that thus the system will become delusive." After reviewing the discussion before the Milwaukee County Medical Society, the Milwaukee *Evening Post* points out what the literal enforcement of the law would mean to physicians as far as work and responsibility are concerned, and says: "Holding these views, is it wonderful that they [Milwaukee physicians] proclaim the enactment ill advised? . . . The protection of the innocent, the safeguarding of health of those yet unborn, these are objects worthy of the utmost vigilance on the part of members of the medical profession, and of all good men and women as well. . . . That the legislature attempted to place on the statute books a chapter intended to effect this object is creditable to all concerned. Since the enactment is impracticable, it behooves the collective wisdom of the community to devise practical precautions to meet the need which this tentative effort of the law-makers was meant to subserve."

Summarizing the practical objections to the law, the Beloit (Wis.) *News* feels that the object aimed at, "to protect innocent women who are now subject to untold suffering because of the diseases of the men they marry," is most commendable, and that a way should be found to make the provisions of the law applicable. The El Paso (Tex.) *Herald*, on the other hand, anticipates that the only good which will result will be the stimulation of public sentiment. It says truly that "in eugenics a little knowledge is a very dangerous thing, but if out of the whirlwind of talk and discussion that has swept through the minds of men lately mothers learn to teach their children a bit more honestly about sex, and parents learn to protect their daughters from men known to be immoral, and if sons are honestly warned against the results of vice, the world will have gained a little." The Wausau (Wis.) *Record*, criticizing the law as a sample of progressive legislation, condemns the entire principle of regulation, which according to the editor, has proved a failure repeatedly in the past. "There is not a commission in Wisconsin whose prototype did not exist two thousand years ago, not a feature of the whole idea but has been worn threadbare as an instrument of tyranny by the nations now in ruin." Greece and

1. The Wisconsin Marriage Law Declared Unconstitutional, editorial, THE JOURNAL A. M. A., Jan. 24, 1914, p. 305.

Rome, medieval Europe and English parliamentary government are all arraigned as witnesses of the folly of regulation. The *Record* concludes that "it is time for the misguided population to wake up and grasp the fact that the whole course of civilization has been away from rather than toward the sort of thing that the oligarchy at Madison is setting up, and to learn that true progress now and always means the liberation of the people from slavish and degrading official supervision."

The Elgin (Ill.) *Courier*, after insisting that the state has no right to fix a definite limit for an indefinite amount of professional services, and that, on the other hand, "the tendency of the times is too much in the direction of rule-making," says that "the state might do far better if it did more for the child that is inevitably going astray and pay less attention to adults who have already blundered." The editor feels, however, that such laws can do no great amount of harm and that their principal function is to "mark the passing of time and, in the meantime, education is being made more accessible, and perhaps it is education and nothing else that can correct the evils which have engaged the attention of the eugenists."

The Louisville (Ky.) *Herald* quotes an eminent Wisconsin lawyer to the effect that the law is an unconstitutional infringement of individual rights, and while declaring its complete sympathy with the objects sought by the more conservative proponents of eugenics, the editor still holds that "the law has limits. Certain social problems must be solved otherwise than by statute. . . . The remedy for the evil . . . seems to lie in education rather than in legislation. Let parents be instructed to guard their sons and daughters against ill-advised marriages. Let the parents, instead of the law, demand certificates of health from prospective wedding principals. Teach the sons and daughters that other requirements in addition to love are essential to happiness in marriage. Without such instruction the most stringent law . . . stands a chance of being a dead letter. With such instruction no law is needed."

The Milwaukee *Sentinel*, after criticizing the law as it passed, undertakes some "constructive suggestions" for the consideration of future legislatures. The *Sentinel* asks, "if we are to have a statute for the public regulation of marriages . . . why not provide for its public administration? Medical discussion and ridicule of the statute has brought out the fact that the average private practitioner is totally incompetent, and in point of apparatus utterly unfurnished for the required tests. . . . The private practitioner's difficulty seems to point plainly to the public doctor and public equipment . . . as the proper recourse. If we are to have such a statute at all, it ought to be made effective for its good purposes by proper administrative provisions. That would involve a system of regularly constituted medical examiners and a state equipment for the really requisite tests."

The same sentiment is expressed by a number of other Wisconsin editors who, after considerable discussion, have finally taken the ground that if the public good required it and the state had the authority to restrict marriage to those who were able to comply with certain physical standards, then the question of determining who are fit for marriage rests on the state and not on the medical profession, and that if the state desired medical services in performing any of its functions, then it should provide those services on a proper basis. Various loopholes and subterfuges for the evasion of the law were pointed out. The attorney-general of the state attempted to put a "reasonable" interpretation on the law by holding that the provision requiring the application of "all known scientific tests" meant only an application of those with which the individual physician happened to be familiar and able to apply. The result of such a ruling would have been that the value of the certificate in each case would have depended entirely on the knowledge and ability of the physician signing it. A Milwaukee attorney tried to solve the puzzle by calling attention to the fact that, under the common law, no marriage ceremony was necessary and that only the filing of a mutual agreement to live together as husband and wife was required to constitute legal marriage in the state. As the legal fee for filing such a document would be only ten cents, this suggestion was hailed as a solution of the problem that was at once practical and economic.

About this time Hon. Bird C. Coler, in an address in Chicago, threw a flood of white light on the situation. Mr. Coler, assuming for the time being the rôle of a prophet, predicted that if children were taught eugenics in the public school the race would die out in one hundred and fifty years. Mr. Coler did not submit the mathematical calculations by which he arrived at this definite conclusion, but advanced, as proof of his assertion, the birth-statistics of the graduates of a woman's college in which sex hygiene had been taught for some time past. Mr. Coler's reasoning seems to have been thus: The graduates of a certain woman's college have given birth to few children. Sex hygiene has been taught in this school for many years, therefore, sex hygiene is responsible for the low birth-rate among the graduates. Mr. Coler's peculiar brand of logic is referred to newspaper paragraphers as an almost unlimited inspiration for mirth. His contribution was quickly taken up and widely commented on, without any great amount of enlightenment resulting.

Another curious development was the objection raised by Milwaukee merchants, who found that in the three weeks of January during which the legal situation was under discussion marriages decreased so much as to injure their business. During the first two weeks of January only five marriage licenses were issued in Milwaukee, as compared with 250 in the same period last year. The Chicago *Post* states that it is estimated that every married couple spends an average of $300 on house furnishings, clothing and other necessities during the first two weeks of married life, and that this amounts to a loss to Milwaukee merchants of about $75,000 in that time. This estimate maintained through the year would amount to over $4,000,000. The *Post* observes that "the fact that probably much of this money is being spent on cigars, drinks, candy and theater-tickets will not comfort the dealers in household furnishings." Fortunately, the decision of the court has probably, by this time, rescued Milwaukee merchants from the danger of bankruptcy.

These editorial opinions and comments might be multiplied almost without limit. After careful and critical perusal of views from all parts of the country, one is inclined to regard the opinion of the Columbus (Ohio) *Dispatch* as the conclusion of the whole matter. "The Wisconsin law is a model all right, although not of what was intended. It is, instead, a model of legislative ignorance and haste."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: New Haven, March 10. Sec., Dr. Charles A. Tuttle, New Haven. Homeopathic: New Haven, March 10. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Eclectic: New Haven, March 10. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

MAINE: Portland, March 10-11. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, March 10-12. Sec., Dr. Walter P. Bowers, Room 159, State House, Boston.

WYOMING: Laramie, March 10-12. Sec., Dr. H. E. McCollum, Laramie.

Tennessee May Report

Dr. A. B. DeLoach, secretary of the Tennessee State Board of Medical Examiners, reports the written examination held at Memphis, Nashville and Knoxville, May 1-2, 1913. The number of subjects examined in was 8, total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 400, including 173 non-graduates, of whom 306 passed, including 122 non-graduates and 94 failed, including 51 non-graduates. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Alabama	(1909)	78.4
University of Arkansas	(1912)	75.5, 82.6
Howard University	(1912)	86.1
Atlanta College of Physicians and Surgeons	(1912)	83.4, 88.2; (1913) 81.5
Bennett Medical College	(1911)	81.6
Chicago College of Medicine and Surgery	(1913)	83
Louisville National Medical College	(1910)	77
University of Louisville	(1910)	83.7; (1911) 84.2; (1913) 84, 84.
College of Physicians and Surgeons, Baltimore	(1910)	84.9
Johns Hopkins University	(1911)	90.4
Maryland Medical College	(1912)	79.6
Mississippi Medical College	(1907)	77.1; (1909) 75.5; (1910) 78; (1911) 80.
American Medical College, St. Louis	(1912)	82.5; (1913) 76.2, 81.4 82, 82.1, 84.6, 85, 85.4.
Barnes Medical College	(1910)	79.7; (1911) 77.2, 79.5
College of Physicians and Surgeons, St. Louis	(1908)	77.4
Homeopathic Medical College of Missouri	(1908)	79.2
University Medical College, Kansas City	(1909)	80.5
Columbia Univ., Coll. of P. & S., New York	(1908)	93
Leonard Medical School	(1910)	91.1; (1911) 75; (1912) 81.7
North Carolina Medical College	(1911)	77.9
Eclectic Medical College, Cincinnati	(1913)	75.4
University of Pennsylvania	(1911)	89.5, 93.6
Chattanooga Medical College	(1907)	75, 75, 77.4
Lincoln Memorial University	(1912)	75; (1913) 81.9, 83.5
Meharry Medical College	(1905)	80.2; (1907) 79.6, 81.1, 86.6; (1911) 75.6, 78.4, 82.4, 86.7; (1913) 75.2, 75.7, 76.5, 76.5, 77.1, 77.4, 77.9, 78.1, 79.1, 79.2, 79.4, 79.5, 79.6, 79.6, 80.4, 80.5, 80.6, 80.9, 80.9, 81, 81.1, 81.7, 81.9, 81.9, 82, 82.4, 82.4, 82.6, 82.6, 82.7, 83, 83.5, 83.5, 83.7, 83.7, 84.4, 85.9, 86, 86.7, 87, 87, 87.2, 87.2, 87.4, 89.6, 89.9, 91.6.
Memphis Hospital Medical College	(1912)	75.7, 86.7; (1913) 75.5, 76, 77, 77, 79.5, 79.6, 79.9, 80, 80, 80, 80, 81, 81.1, 81.9, 82, 82, 83, 83, 83 83.2, 86.4, 86.7, 87, 87.5.
Vanderbilt University	(1910)	77.9, 80.1, 89; (1912) 81, 86, 87, 87.5, 88, (1913) 83, 83, 83, 83.5, 83.5, 84.1, 84.5, 85, 85, 85.4, 85.5, 86.9, 87.1, 87.5, 88.6, 89, 89.4, 89.9, 90.5.
University of Tennessee	(1901)	76; (1905) 85; (1912) 78.5; (1913) 76.4, 81, 81.2, 82.9, 83.4, 84.2, 85.1, 85.6, 86.1, 86.5, 87, 87.1, 87.4, 88.2, 89.2, 89.7, 90.1, 95.1.
University of West Tennessee	(1910)	80; (1911) 76.7; (1913) 77.4, 78.4, 82.5.
University of Naples, Italy	(1901)	82.7
Non-graduates		75, 75.2, 75.2, 75.4, 75.4, 75.5, 75.9, 76.2, 76.2, 76.4, 76.9, 77, 77, 77.1, 77.2, 77.2, 77.7, 77.9, 78, 78.4, 78.7, 79, 79, 79.1, 79.5, 79.5, 79.6, 80, 80, 80, 80, 80, 80, 80.5, 80.5, 80.5, 80.6, 80.6, 80.7 80.7, 80.9, 80.9, 81, 81, 81, 81, 81, 81, 81.1, 81.7, 82, 82, 82, 82.1, 82.2, 82.4, 82.4, 82.6, 82.6, 82.6, 83, 83.1, 83.6, 84, 84, 84, 84, 84.1, 84.1, 84.6, 84.9, 85, 85, 85, 85.1, 85.1, 85.2, 85.4, 85.4, 85.4, 85.4, 85.6, 85.6, 85.7, 85.7, 85.9, 85.9, 86, 86, 86, 86, 86.1, 86.5, 86.5, 86.6, 86.7, 86.9, 87, 87, 87, 87, 87, 87.1, 87.2, 87.4, 87.4, 87.4, 87.5, 88, 88.1, 88.4, 88.6, 88.7, 88.7, 89, 89, 89, 89, 89.2, 89.7, 92.9.

FAILED

College	Year Grad.	Per Cent.
Southern College of Med. & Surg.	(1912)	71.4; (1913) 62.5, 67.9
Bennett Medical College	(1913)	73.9
Illinois Medical College	(1909)	64.5
Hospital College of Medicine, Louisville	(1893)	68
Maryland Medical College	(1911)	73.6
American Medical College, St. Louis	(1913)	62.1
Barnes Medical College	(1910)	71.2
Mississippi Medical College	(1911)	66.4, 72, 74.7
Chattanooga Medical College	(1903)	51.6
Knoxville Medical College	(1909)	61.5, 73.4
Lincoln Memorial University	(1910)	49; (1911) 55.6; (1913) 57.5, 64.9, 71.1, 71.5, 71.5, 72.5.
Memphis Hospital Medical College	(1913)	65.2, 66.6, 70.1, 72, 73.5, 74.
Meharry Medical College	(1910)	70.4; (1912) 68.9; (1913) 71
University of West Tennessee	(1909)	72.7; (1910) 58.7; (1912) 67.4, 71.2; (1913) 69.6, 74, 74.5.
Universities of Nashville and Tennessee	(1911)	74.4
University of Tennessee	(1895)	46
Vanderbilt University	(1913)	58, 71.2
Non-graduates		49.6, 55, 56.5, 56.6, 58.7, 62.5, 63, 63, 67.1, 67.5, 67.7, 67.7, 67 7, 68, 68.2, 68.4, 68.5, 68.9, 69.1, 69.5, 69.6, 69.9, 70, 70.2, 70.4, 70.7, 71, 71.5, 71.6, 71.6, 72, 72.1, 72.4, 72.6, 73, 73.2, 73.4, 73.4, 73.6, 73.7, 74 74, 74, 74.1, 74.2, 74.2, 74.2, 74.5, 74.6, 74.7.*

* Rejected on account of fraud.

West Virginia November Report

Dr. S. L. Jepson, secretary of the West Virginia State Board of Health, reports the oral and written examination held at Parkersburg, Nov. 10-11, 1913. The number of subjects examined in was 10; total number of candidates examined was 24, of whom 16 passed and 8 failed. Eight candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University	(1912)	85.3
Kentucky School of Medicine	(1906)	81.1
University of Louisville	(1913)	84.9
College of Physicians and Surgeons, Baltimore	(1912)	81.1, 86.2; (1913) 88.7, 96.5.
Maryland Medical College	(1912)	83.5, 84.4
Leonard Medical School	(1913)	82.4, 83.5, 83.6, 85.7, 86.8.
North Carolina Medical College	(1911)	88.6
Medical College of Virginia	(1912)	88

FAILED

College	Year Grad.	Per Cent.
University of Louisville	(1913)	78.5
Leonard Medical College	(1911)	72.1; (1913) 73.5, 79.6
Eclectic Medical College, Cincinnati	(1912)	77.3
Meharry Medical College	(1907)	79.3
University College of Medicine, Richmond	(1913)	78.2
National University, Athens	(1906)	77.7

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Johns Hopkins University	(1911)	Maryland
University of Maryland, School of Medicine	(1908)	Maryland
College of Physicians and Surgeons, Boston	(1912)	N. Carolina
Leonard Medical College	(1912)	Georgia
Ohio Medical University	(1903)	Penna.
University of Tennessee	(1912)	Tennessee
University College of Medicine, Richmond	(1912)	Virginia
University of Virginia	(1911)	Virginia

SURGERY

1. How would you treat acute traumatic synovitis of the knee-joint? 2. Should splints be applied in flexed or straight position in a fracture of the olecranon process? Why? 3. Describe a typical case of acute prostatitis. What treatment should be employed? 4. What is meant by McBurney's incision for appendicitis, and why made? 5. What treatment should be employed in a compound fracture of the astragalus? What is the usual result of such an injury? 6. Define shock and give treatment. 7. Define ulcer, abscess and fistula. Give treatment of each. 8. What is meant by Pott's fracture? Give treatment. 9. Differentiate benign and malignant tumors. Name two of each. 10. Describe briefly the preparation of patient for laparotomy.

ANATOMY AND EMBRYOLOGY

1. Describe the clavicle. 2. Describe the lateral ventricles of the brain. 3. Describe the axilla. 4. Name the extensors of the fingers and give their nerve supply. 5. Describe the blood-vessels of the walls of the heart. 6. Describe the mesentery and name the viscera supplied with this structure. 7. Name the bones and ligaments entering into the formation of the knee-joint. 8. Name the ductless glands. 9. Define zona pellucida, centrosome, mesoderm, urachus, ductus arteriosus. 10. Describe the blood-vessels of the placenta.

BACTERIOLOGY AND HYGIENE

1. What are bacteria? What general purpose do they serve in the economy of nature? 2. What is a virus? How attenuated? 3. Give two methods of producing artificial immunity against infectious diseases. 4. Of what value is bacteriology in the diagnosis of syphilis? 5. What proof is necessary to demonstrate a causal relation between a given bacterial species and a disease. 6. What are occupational diseases? Give three examples. 7. Name five diseases of which impure milk is a carrier. 8. How would you disinfect a room in which a patient suffering from a contagious disease had died? 9. What is a disinfectant? Name three effective for general purposes. 10. Discuss mode of dissemination of typhoid fever.

OBSTETRICS AND GYNECOLOGY

1. Describe a normal labor, its stages and its management. 2. Give the diameter and boundaries of the inlet to the true pelvis. 3. Give the symptoms and treatment of puerperal septicemia. 4. What do you regard as the best method of delivery in an occipito-posterior position when the head fails to engage? 5. What movements, when complete, constitute the mechanism of labor? 6. Give your technic in the examination of a gynecological case in your office. 7. Treatment of gonorrhea in the female; name its complications and their treatment. 8. Differentiate uterine fibroid tumor, pregnancy and tumors of ovary. 9. Diagnosis, prognosis and treatment of carcinoma of uterus. 10. Name the most common displacements of the uterus.

SPECIAL MEDICINE

1. Give the principal points required in taking the history of a case. 2. Give points on the chest at which the four principal heart murmurs are heard. 3. What is meant by myopia, hypermetropia, and how is each corrected? 4. Describe a case of ophthalmia neonatorum; give cause and prevention. 5. Hay fever; give cause, symptoms and treatment. 6. Epistaxis; give cause and treatment. 7. Laryngoscope; describe method of use. 8. Follicular pharyngitis; describe symptoms and treatment. 9. Hardened ear wax; give symptoms and treatment. 10. Abscess of middle ear; how diagnose and treat.

CHEMISTRY AND MEDICAL JURISPRUDENCE

1. Name three inorganic acids and give their elementary composition. 2. Define atom and molecule. 3. What is the source of glycerine? What four simple elements are always found in proteids? 5. Give test for blood in urine. 6. Give test for bile in urine. 7. Give chemical formulas for: nitric acid; sulphuric acid; hydrochloric acid. 8. Give the chemical name and formula for Epsom salts. 9. What is an antidote for phenol when a poisonous quantity has been taken? 10. What would be the proper thing to do should you find a person apparently dead on the public road?

PHYSIOLOGY AND HISTOLOGY

1. What is the source of animal heat, and how is the temperature of the body maintained? 2. What is the composition and action of the bile? 3. Describe the course and changes nitrogenous foods undergo in the body. 4. Give the physiological action of the pneumogastric nerve. 5. Red corpuscles: Describe them, where formed and destroyed. Give function. 6. What is the effect of the use of alcohol long continued, on the human body? 7. Define secretion, excretion and assimilation. 8. What changes are produced in the air and in the blood by respiration? 9. Give the histological structure of the kidneys. 10. Give histology of the skin.

MATERIA MEDICA AND THERAPEUTICS

1. Strychnin: From what derived, dose, effect on heart and respiration? 2. Codein: From what derived, dose, what effect upon

respiration. Give therapy. 3. Digitalis: Dose of tincture, effect on heart and pulse, therapeutic uses, when contra-indicated. 4. Give dose of (1) atropin sulphus, (2) hyoscin, (3) cocain, (4) apomorphin, (5) hydrargyri chloridum corrosivum. (6) hydrargyri chloridum mite, (7) potassii et sodii tartras, (8) liquor potassii arsenitis, (9) oleum ricini, (10) oleum morrhuae. 5. Antidote for (1) oxalic acid, (2) opium, (3) nitric acid, (4) iodin, (5) arsenic, (6 corrosive sublimate, (7) lye, (8) phosphorus, (9) silver nitrate, (10) antimonii et potassii tartras. 6. Name three cardiac stimulants, give adult dose, and dose for child two years old. 7. Write a prescription containing not less than three drugs for an adult suffering with dysentery. 8. Adult with history of having taken some drug, rapid breathing and pulse, red efflorescence of skin, active talkative delirium, dry throat, a few convulsions, dilated pupils, diagnosis and treatment. 9. Fluid extract of ergot: Therapeutic use and contra-indications. 10. Acetanilid: Therapeutic use, dose and symptoms of poisoning.

PRACTICE AND PEDIATRICS

1. Define, diagnose and treat acute articular rheumatism. 2. Give the etiology, symptoms and treatment of pernicious anemia. 3. Give the etiology, diagnose and treat typhoid fever. 4. Give the etiology, diagnosis and treatment of diabetes mellitus. 5. Define, diagnose and treat tetanus. 6. Give symptoms and treatment of erysipelas. 7. Describe the physical signs and symptoms of lobar pneumonia. Give treatment. 8. Discuss the etiology and treatment of exophthalmic goiter. 9. Define, diagnose and treat acute poliomyelitis. 10. Discuss the etiology, give symptoms and treatment of chorea.

Iowa January Reciprocity Report

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the number of candidates licensed through reciprocity, Jan. 14, 1914. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Indiana Medical College	(1906)	Indiana
John A. Creighton Medical College	(1911)	Nebraska
Lincoln Medical College	(1908)	Nebraska

Book Notices

MANUAL OF OBSTETRICS. By John Osborn Polak, M.Sc., M.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital. Leather. Price, $3 net. Pp. 468, with 122 illustrations. New York: D. Appleton & Co., 1913.

The object of this volume, as frankly set forth, is to place the essential facts and principles of obstetrics within the easy grasp of the student. It is intended as a systematic introduction to the more elaborate treatises, and as a guide in following didactic and practical teaching of the college courses. In preparing a volume of such a nature, brevity is the desideratum. Hence most attention has been given to practical topics, theoretical discussions and elaboration of detail being excluded. The chapters are long but carefully subdivided, such divisions being indicated by bold-faced type. Subheadings are also prominent, and the arrangement of subject-matter and text is such that the student will be able readily to get the important points. The essentials are well formulated and compactly set forth in convenient grouping or in tables. Thus the embryology of the genitalia, the development of the ovum, the signs of pregnancy, preparation for labor and many such topics are fully presented, yet made to occupy a minimum of space. For so compact a presentation the illustrations are abundant and, for the most part, good. Space is given to articial feeding and to disorders of the new-born infant. No dispute can be entered into with the author as to his position in debatable points, since he has omitted all argument.

SYPHILIS AND THE NERVOUS SYSTEM, FOR PRACTITIONERS, NEUROLOGISTS AND SYPHILOLOGISTS. By Dr. Max Nonne, Chief of the Nervous Department in the General Hospital, Hamburg. Authorized Translation from the Second German Edition, by Charles R. Ball, B.A., M.D., Chief of the Nervous and Mental Department, St. Paul Free Dispensary. Cloth. Price, $4. Pp. 406, with 98 illustrations. Philadelphia J. B. Lippincott Company, 1913.

Nonne's book on nervous syphilis, of which this is a translation, has already become a classic. Though the first edition appeared only six years ago, citations from it appear everywhere. Not only does the author expound the so-called "four reactions" for nervous syphilis, on which he has expended much labor, but he also tells the story of syphilis of the nervous system in a manner not heretofore attempted by anyone. The book is written in an easy conversational style, divided into nineteen lectures. Much to the regret of English readers, until this translation appeared, no one seemed sufficiently enthusiastic and industrious to begin work on an English translation. It was left for Dr. Ball, an ardent admirer and former student of Dr. Nonne, to accomplish the task of translating his master's book. In common with many other translations from the German, it shares the fault of being too literal. It may appear trite for us to be obliged to reiterate that enthusiasm and industry are not the only requisites for furnishing a good translation of a foreign book. In our opinion, a translator must be master of at least two languages, the one from which he translates and the other into which he translates. In the majority of instances, the mastery embraces one language and a dictionary. In spite of its shortcomings, and there are many, this translation is better than none at all. Because of the well-deserved reputation of its author, the book should find a large reading public.

IN MEMORY OF DR. JAMES LIVINGSTONE THOMPSON, 1832-1913, AND HIS SON, DR. DANIEL A. THOMPSON, 1862-1904. By the Indianapolis Literary Club, the Indianapolis Medical Society, the Loyal Legion of Indiana and Others. Paper. Pp. 98. Indianapolis, 1913.

The extent and the manner in which character and individuality impress themselves on a community, a state or a nation are always interesting, though perhaps impossible of exact measurement and description. It is usually only after men possessing these qualities have passed away that an approximate estimate of their influence in a variety of relations can be made. The profession should be proud of medical men of this type. Such a man was Dr. James L. Thompson of Indiana, a pioneer in ophthalmology who, with his teacher, Dr. Elkanah Williams of Cincinnati, was one of the first men in this country to devote his attention exclusively to this branch. As citizen, physician, soldier and author, a man of great force of character, Dr. Thompson touched the life of his community and the affairs of his profession at many points, and everywhere, as was said of him, "his supremacy was acknowledged by all." His high qualities have stirred his friends to prepare this little memorial, contributed to by a poet, a lay and a medical editor, an author and a number of his brother physicians and others, who have here attempted to express their appreciation of the man.

INDUSTRIAL POISONING FROM FUMES, GASES AND POISONS OF MANUFACTURING PROCESSES. By Dr. J. Rambousek, Professor of Factory Hygiene, Prague. Translated and Edited by Thomas M. Legge, M.D., D.P.H., H.M., Inspector of Factories. Cloth. Price, $3.50 net. Pp. 360, with illustrations. New York: Longmans, Green & Co., 1913.

"The book is intended," the author says, "for all who are, or are obliged to be, or ought to be, interested in industrial poisoning." Occupational diseases have been much studied recently. This work was selected by the translator and editor because it seemed to treat the subject in comprehensive and systematic manner within the compass of a small volume. Numerous references to the subject are included in a special appendix. The book is well illustrated with diagrams of apparatus employed for various industries and numerous instances of actual cases of poisoning are quoted. It is interesting and worth while.

DISEASES AND INJURIES OF THE EYE. A Text-Book for Students and Practitioners. By William George Sym, M.D., F.R.C.S.E. Ophthalmic Surgeon, Edinburgh Royal Infirmary. Cloth. Price, $2.50 net. Pp. 493, with 114 illustrations. New York: The Macmillan Company, 1913.

This book is one of the Edinburgh Medical Series, general editor, John D. Combie, and was probably written at the behest of the editor or publisher for the purpose of filling a place in a series. There does not appear to be any other reason for its existence. The book presents its subject as well as do other numerous similar books. The size of the book is a virtue—it at least is not so pretentious as are some of the larger unnecessary books.

Miscellany

The Declining Birth-Rate.—Among the many expressions of opinion which have been made on the advancing reduction of births in Germany, that of the hygienist, von Gruber of Munich, delivered in the German Association for Public Health must be accorded great significance. The number of births in Germany has steadily decreased from 1876, when it amounted to 426 per ten thousand inhabitants, and since the year 1900 there has occurred a constantly more marked reduction. In 1911, the number sunk about 60,000. The excess of births in 1906 was 149 per ten thousand; in 1911 it was only 113. In the kingdom of Saxony, which was formerly extraordinarily fruitful in children, the reduction has been most marked. In that kingdom the birth-rate has diminished since 1876 by about 40 per cent. The reduction in the fertility of the country women must be especially emphasized because the country was the one real hope and support. The birth-rate has undergone a more marked reduction in Protestant than in Roman Catholic districts. Moreover, there is a certain relation to the political complexion of the locality, for in general those districts in which the representative is a social democrat show a more marked reduction. In Berlin the birth-rate dropped in the period from 1876 to 1912 from 149 to 73, and the legitimate fertility from 240 to 80, that is, to one-third. The reduction is still more marked in the suburbs. The birth-rate of Berlin is no longer sufficient to maintain the present number of the population by its own increase. The important reduction in the last three years is chiefly to be attributed to the fact that extensive circles of the working population are now beginning to follow the example of the well-to-do. A circular query of the Imperial postal department for the year 1911 showed that of the upper employees nearly 16 per cent. are unmarried and of the under clerks not 4 per cent., and that 20 per cent. of the marriages of the higher officials were childless and of those of the under clerks only 13 per cent., and that the children to a marriage of the higher officials average 1.8 and of the under clerks 2.4.

Von Gruber spoke of the influence of venereal diseases and of alcoholism on the reduction in births, which shows itself naturally chiefly in the large cities. In reduction in births voluntary prevention plays a decisive rôle. The birth-rate of southern Slavic people is high. There is little help to be expected from the free play of the forces involved, or else a change would already have occurred in the condition of France, where the need of the fatherland with reference to the reduction in births is plainly seen and where such ardent patriotism reigns. Instead of this there are many districts in France in which there are more deaths than births. France would already have a negative birth-rate if the lack was not supplied by foreigners, especially the Italians. The changed relations of the family, the greater freedom of women and their increasing participation in industry, together with the fear of loss of health and prosperity with many children, favor the restriction of the birth-rate. The fear as to the health of women is unwarranted since it is shown that up to ten children the health of the mother is not materially affected. Nor is poverty a legitimate excuse since there never was a time when the families of workmen were more prosperous than at the present day. The entire population has been permeated with neomalthusianism and with the desire to live a life with less care, less risk, a more comfortable and refined life. This impression is increased by the doctrine of individualism that every one's highest aim in life should be and must be himself. The author emphasized the economic disadvantages of a stationary population. Already in France industry and agriculture are at a standstill.

Reduction in the death-rate, especially in infant mortality, cannot possibly compensate for the fall in the birth-rate. In order to overcome the two-child system, two measures especially are requisite: first, a change in our ideals so that the raising of a numerous and healthy posterity shall be regarded as the highest duty of every man; second, the provision of such economic conditions as are required for the rational bringing up of a sufficient number of children. Large sums must be devoted yearly to this purpose, and so applied not only that there shall be a sufficient number of offspring, but also that their health shall be assured. This aim is not to be secured by means of the so-called emancipation of women, by free love and the education of children by the state. . . . In his conclusion, von Gruber spoke with great decision against the advocates of women's rights. They protest against being merely child-bearing machines, as if that were their only function, as if they had not also the task of bringing up their children. They wish now to become thinking machines. But they should leave that to the men whose entire bringing up equips them better for it, for consistency has never been the heritage of the female sex.

The Deformities of Illustrious Men.—In his presidential address at the twenty-sixth annual meeting of French surgeons held in Paris recently, Dr. Kirmisson mentioned among the illustrious men who have been deformed, Tyrtaeus, the lyric poet, who was lame, and Aesop, the fabulist, whose bust by Thorwaldsen shows the deformity of Pott's disease; Alexander the Great, who had torticollis; Soult, Talleyrand, Walter Scott and Lord Byron. Soult's infirmity was not congenital, but was caused by a wound in war. As for Walter Scott, Kirmisson concludes from the information furnished by Scott's autobiography that the cause of his lameness was infantile paralysis, which produced an equinism. One of his biographers, Robert Chambers, says that he rested his weight on the tips of his toes. At the end of two years he began to walk by the aid of crutches. It is difficult to procure exact information with regard to the deformity of Talleyrand. Kirmisson was able to study a shoe of Talleyrand's recently bequeathed to the Carnavalet Museum in Paris, which indicates that the deformity was an equinovarus of the right foot. In the case of Byron, also, a pair of orthopedic shoes made for him as a child, which are in the possession of Murray, the English publisher, indicates the same deformity as in Talleyrand's case. This agrees with a letter written by his mother when the child was 3 years old, saying: "George's right foot turns in. He walks almost entirely on the side of the foot." It also agrees with the description in the *Lancet* by Sheldrake, who was commissioned to make orthopedic shoes for Byron. If the deformity in question seems not to have troubled Talleyrand greatly, it was a veritable torture for Byron. "When one sees what a source of physical and moral torture a deformity may be," remarked Kirmisson, "one realizes the benefit of orthopedic surgery."

Decompressive Trephining in Cerebral Hemorrhage.—Dr. Pierre Marie, professor of pathologic anatomy at the Académie de médecine, read before the Faculté de medécine de Paris an important paper on this subject. The comparison of clinical facts and anatomopathologic lesions of the brain in cerebral hemorrhage leads to the conclusion that the coma is due much less to the sudden irruption of a considerable mass of blood in the interior of the affected hemisphere than to the compression of the brain caused by the presence of this quantity of blood. The sudden irruption of the blood produces ictus, which is a transitory phenomenon; the compression of the brain produces coma, which is a persistent phenomenon, but a deep and lasting coma is not produced unless the opposite hemisphere is compressed also. Pierre Marie was able in several instances to demonstrate the fact that a focus of cerebral hemorrhage, even when very large, from 5 to 6 cm. in length and from 3 to 4 in breadth, does not produce coma if it does not lead to compression of the opposite hemisphere. Conversation may be carried on with the patient; he retains enough consciousness to answer questions and to make gestures which he is told to make. When the unaffected hemisphere is compressed, however, the coma is profound and absolute. The patient has lost all relations with the exterior world. The importance of the compression of the sound hemisphere in the production of coma is great, for it leads to a very simple and logical therapeutic conclusion, the necessity for decompressive trephining. But what region of the cranium shall be trephined? If the trephining is done on the side of the hemorrhage, the patient

is subjected to many dangers. In the first place, there is the great risk of augmenting the hemorrhage. Pierre Marie therefore proposed decompressive trephining on the side of the sound hemisphere. The advantages are evident: (1) the influence of operative traumatism on the focus of the hemorrhage is reduced to the minimum; (2) there is no fear that the hemorrhagic focus will bleed in the meninges, since the bony wall is intact next to it; (3) decompression of the healthy hemisphere is made as quickly as possible. Pierre Marie does not propose to operate in every case of cerebral hemorrhage. Age is a contra-indication, for among the old bronchopulmonary complications make the prognosis dubious. A very pronounced albuminary syndrome is also a contra-indication. It is preferable to operate on patients before their temperature rises, for then secondary infections may play an injurious rôle. When the coma is complete, from the first hours, it is to be feared that on account of the enormous quantity of blood which has escaped or the extent of the focus toward the base of the brain, decompressive operation will be ineffective. All these considerations apply equally to certain forms of massive softening in the sylvian tract, which, by an intense inflammatory edema in the softened hemisphere, produces pronounced compression of the sound hemisphere.

Care of the New-Born.—On the second day, after both mother and infant have had a good rest, let the baby take the breast once or, at most, twice, so that he can get some colostrum, which by this time will be present in larger quantities in the breasts, so as to clean out his bowels of meconium. If he cries much give him water, as much as he wants. On the third day have him nurse three times, four on the fourth day, and from the fifth day on feed him every four hours in daytime, but never at night, thus giving him five feedings daily, usually at 6 and 10 a. m. and at 2, 6, and 10 p. m. If he sleeps, never allow him to be awakened, but you will be surprised to see how soon the little ones get accustomed to this regime and how well they know when it is time for nursing. Try this regime once yourselves; observe the rested condition of the mothers after they have had a full night's rest every night from the time the baby is born; note how they have a plentiful supply of good milk without resorting to any specially disagreeable and nauseating diet consisting of overlarge amounts of liquids which are supposed to produce milk, while as a matter of fact, they do not, but rather prevent it (and let me here add that I allow my puerperae to eat anything they want after they have had their first refreshing sleep, and that I do no longer place any restrictions on their diet, as long as they are getting sufficient nourishment and keep in good health); observe also the good condition of the babies, how quietly they sleep and the look of contentment on their faces; try it only once and I am sure you will become as enthusiastic adherents of this method as I am myself.—Carl G. Leo-Wolf, M.D., in *New York State Jour. Med.*

Journalistic Suggestions for Medical Writers.—Eliot in the *Pennsylvania Medical Journal* discusses this subject from the point of view of the editor. He says that it is an unfortunate trait of the average man to desire to see his name in print, but it is hard to convince some writers that their productions are excellent from a literary point of view but useless from that of editorial policy. He says that many carefully prepared papers sent to journals on account of their large circulation rather than the adaptability of the paper to the journal are returned as unavailable, to the great disappointment of the author. If he is reasonable, however, he will ask himself whether the paper was such as to hold the attention of the general reader, and will also remember that he is not paying for the printing. Eliot then calls attention to some things which the author of a paper should keep in mind in preparing his manuscript. He should have some system and should divide his subject into headings, placing all the ideas under each heading which properly belong to it. The reader does not care for the author's titles and appointments, but is interested only in what he has to say, and expects him to say it in the fewest possible words. Illustrations, temperature charts, etc., should always be on separate sheets, and illustrations should illustrate and not show instruments, apparatus or forms of disease of common use or of daily observation. The paper should be sent to one journal only. The title should express the subject; the shorter it is, the better. Introductions are seldom of any value except as pieces of vanity on the part of the writer. An apology for a paper is an admission of mediocrity and few will read it. Quotations tend to weaken a paper. A short abstract of the points to which it is desired to make references is better. A long list of references is undesirable. Authors interested in the subject will verify the work from the literature. The names of hospitals, sanatoriums, asylums and homes, or the names of manufacturing houses, should not be given, lest the paper be taken for an advertisement. Long case histories are usually unnecessary; names of consultants, assistants and others are uninteresting. Nobody cares who was present or who assisted, but everybody wants to know the essential points of what was done and how it was done. (It might be added that the disjointed, telegram style of case reports is objectionable.)

The Eyeball-Heart Reflex.—Loeper and Mougeot reported research last year confirming the instructive import of Aschner's reflex, the slowing of the heart-beat when pressure is applied to the eyeballs. In two or three seconds at most, the heart slows up by about 8 beats to the minute, but the former rate returns as soon as the pressure is released. In tabes this reflex seems to be abolished. In some cases the absence of the oculocardiac reflex, as they call it, was the first sign to attract attention to the tabes. The apparently paradoxic tachycardia with abnormally high blood-pressure does not affect this reflex, but this tachycardia warns of impending breakdown of the left heart and calls for digitalis unless it yields to other measures. They explain the mechanism of this tachycardia, saying that the eyeball-heart reflex first threw light on it. They published several communications on the reflex in the *Progrès médical*, 1913, xli, 211, 663 and 675. With a gastric neurosis this reflex is an indication whether the pneumogastric or the vagus is predominantly involved, and this may prove a guide to treatment. In one of the cases reported the patient had an ulcer on the lesser curvature, and the pulse slowed up by 14 beats on pressure of the eyeballs. Three months after resection of the stomach the pressure caused the pulse to drop from 88 to 62, a loss of 26 beats. The pressure on the eyeballs never seemed to do any harm. It exaggerates bradycardia when it is of nervous origin, and may exaggerate arhythmia. With rudimentary exophthalmic goiter and very emotional subjects, with a tendency to "hot flashes" and profuse sweating, pressure on the eyeballs is liable to accelerate the pulse.

War.—From a letter just received from an eye-witness of conditions in the hospitals and among the sick and wounded prisoners in one city in the Balkan Peninsula, the following paragraph is taken: "Coming to the hospital, we found three flights of stairs and landings crowded with some hundred sick and dying on the steps and floors, two rooms with forty beds tightly packed in each, with sick lying in the beds and others sitting on the corners waiting for some to die for their places—calling for water, and no water; calling for help, and no help—all in a state of the most horrible filth, walls and floors likewise, dysentery, typhus, wounds, meningitis, and diseases unknown to me—some puffed out near to bursting, others absolute skeletons; flies, lice and fleas, vermin swarming; one doctor, just arrived, striving to examine the sick, and a few frightened men trying to act as nurses, but needing rather to be nursed themselves. A few drinking-cups in common for all, filthy rags of clothes, and in many cases no blankets; a few sheets, drenched in filth, and death gurgles continuous."—*Am. Red Cross Mag.*, October, 1913.

Race Mixtures.—Dr. Eliot of Harvard spoke recently of the changes immigration has caused. In his youth Dr. Eliot's community was homogeneous. His father's servants, the men who worked his farm, the mechanics, all the servants at Harvard, were Americans, descended from Pilgrim stock. But those Puritans, let us remember, were themselves not at all

pure ethnically. There has probably never been since Homer, nor for many thousands of years before him, a pure race of men. The English who supplanted the aboriginal Indians were by no means a pure type; nor were the Dutch, nor the French, nor the Spaniards. Take the Frenchman of to-day. In the North are the descendants of the Belgae, the Walloons and other Kymri; in the East those of Germans and Burgundians; in the West Normans; in the center Celts, who in the epoch when their name arose consisted of foreigners of various origins and of the aborigines; in the South, ancient Aquitanians and Basques. Professor Boas of Columbia has found that where the ratio of race-intermingling is as one to nine there will be, among the more numerous population, only eighteen per thousand in the fourth generation of pure blood; and where two types intermarry with equal freedom, less than one person in ten thousand will be of pure descent—that is, within a century the process of intermixture should be complete.—*Harper's Weekly*, Feb. 7, 1914.

Medicolegal

Liability of Employer for Death of Employee when Anesthetic is Administered by Layman—Duty to Furnish Two Physicians—A Physician Deemed Incompetent

(Nations vs. Ludington, Wells & Van Schaick Lumber Co. (La.), 63 So. R. 257)

The Supreme Court of Louisiana holds that an award of $8,000 damages should be increased to $10,000, or $5,000 for the widow and $5,000 for the children, for the death of an employee of the defendant whose hand was injured while he was at his work, and who died an hour or so later on the operating-table, while chloroform was being administered to him preparatory to an operation on the injured hand. The court says that the physician was assisted by his wife, who had graduated as a trained nurse, and by the saw-filer of the mill. The latter administered the chloroform. It seemed that it was he who usually performed that task on such occasions at that mill. The physician said that the patient had taken the chloroform and gone under complete anesthesia nicely, and that he had started to wash and clear up the hand, preparatory to the work, when he noticed that the patient had quit breathing, and he sought to restore respiration. The physician gave it as his opinion that the man died from nervous shock and the ordinary effect of chloroform. But the expert evidence showed that the man exhibited none of the symptoms of shock, and the court must conclude that his death was caused by the chloroform.

Was it negligence to allow a layman to administer it? The court does not think there can be any serious question but that allowing a layman to administer the chloroform was the taking of a very great risk, and constituted negligence if it was avoidable. As to that, nothing showed that it was not avoidable in the sense that, rather than take the risk of a layman administering the chloroform, it would have been better not to have performed the operation at all, but simply to assuage the pain by sedatives. But, granting that an operation was necessary, and that the anesthetization was advisable, nothing showed that it was not possible to secure an assistant physician. Half a dozen lived within a couple of miles, and the mashing of a hand, even though more aggravated than was shown to have been the case in the present instance, is not so liable to be promptly fatal as not to allow of time in which to summon a neighboring physician; and temporary relief from pain can be given without danger to life. It was said that an effort was made to summon one of the physicians of the town not two miles distant, but the evidence left no doubt that no serious effort was made, and that the saw-filer was supposed to be entirely competent in the premises.

The man was negligently dealt with. On whom rested the responsibility? The attending physician said he demanded an assistant of the assistant superintendent of the mill and of the man himself, but the man himself was in intense pain, and hardly in a position to advise with the physician as to what was, under the circumstances, the best course to pursue. The responsibility rested, the court thinks, on the assistant superintendent, who failed to procure an assistant physician, and on the physician who consented to proceed without competent assistance.

A condition of the employment contract at the defendant's mill was that the company should withhold weekly out of the wages of the employees a certain amount to go toward a fund for securing medical aid for the employees in case of need. The company itself contributed no part toward the fund and derived no profit therefrom, save perhaps in the betterment brought about thereby in its labor conditions. Beyond making this weekly contribution, the employees took no part in procuring the medical aid. The company retained that function in its own hands.

This was a business arrangement between the parties; and a part of the company's understanding was to use due care in providing the employee with a competent physician, or with two if need were. The Supreme Court of Missouri has held that the company in such a case must go beyond employing a competent physician; that it "must go further and competently treat the patient." But the weight of authority seems to be that when an employer derives no profit from the retention of the hospital fund from its employees, it is liable only for failure to exercise ordinary care to select, employ and retain a competent physician. This, however, means, of course, that if a case necessitates the services of two physicians, then that due care must be exercised in providing the two. In this case the company clearly failed in its duty to provide this second physician. No effort, or, if any, only a merely perfunctory one, seemed to have been made in that regard. The attending physician "demanded" of the assistant superintendent that it be done, and it was not done.

Furthermore, the attending physician himself was a mere substitute for the regular physician, who was off on a month's holiday. He was not a registered physician of the state. It was argued that this did not detract from his competency. No, but it added to the defendant's burden of proof in showing his competency; a prima facie case to the contrary having been made out by the result of his work. Except out of his own mouth not a word was in the record as to his competency. From his own testimony the court gathered that his nervous condition was then, or had recently been, such that he had had to give up for a time the practice of his profession at the place where he had last been located. From the fact testified to by him of his having repeatedly changed location, the court gathered that there must have been something detracting from his success. Everything considered, the court does not think this physician was such a one as the plaintiff's husband had the right to be furnished with under the agreement with the defendant company.

Liability of Vendors of Dyed Furs for Injuries to Health

(Gerkin v. Brown & Schler Co. (Mich.), 143 N. W. R. 48)

The Supreme Court of Michigan holds that it may be a question for the jury whether, under given circumstances, a wholesaler is not liable for injuries resulting to a purchaser from a retailer, from wearing a fur-lined coat with a dyed or blended collar which poisons his neck, face and hands, causing him great suffering, and seriously injuring his health. It is a common understanding and a reasonable presumption that a fur coat is a harmless thing, free from suspicion of hidden dangers to any one, and the testimony in this case showed that this is true in fact in all cases in which the fur is not artificially colored; but it was shown that, if the fur is dyed, in certain cases some coats are imminently dangerous to the health of some persons, when used for the purpose for which they are manufactured and sold.

When the fact is once established and demonstrated by experience that a certain commodity apparently harmless contains concealed dangers, and when distributed to the public through the channels of trade and used for the purposes for

which it was made and sold is sure to cause suffering to, and injure the health of, some innocent purchaser, even though the percentage of those injured be not large, a duty arises to, and a responsibility rests on, the manufacturer and dealer with knowledge, to the extent, at least, of warning the ignorant consumer or user of the existence of the hidden danger. Failing to do so, the dealer, as well as the manufacturer, who has the knowledge and does not impart it, is liable to a subsequent ignorant purchaser, reasonably within contemplation of the parties to the original sale, for injuries sustained through such hidden dangers. This is by reason of the duty the dealer owes to the public generally, which includes all whom it may concern, to give notice of any concealed dangers in the commodity in which he traffics, and to exercise a reasonable precaution for the protection of others commensurate with the peril involved.

That the great majority of persons are safe from the particular danger concealed in the article sold, or that few injuries in fact result from its use, does not militate against this principle when the certain fact of imminent danger to a percentage is established. Many people are immune from the most virulent contagious diseases, and the percentage of injuries to those ignorantly using defective machinery or dangerous explosives, or unwholesome and dangerously adulterated foods, is small in proportion to the number who ignorantly or knowingly use them; but it could not be contended, for that reason, that the person knowingly renting a house or selling clothing which were infected with small-pox, or selling defective machinery, or tainted meats, or dangerous explosives, without warning, to one ignorant of the danger, and who was injured thereby, might escape liability.

Liability between County and Town for Expenses of Quarantine

(Board of Commissioners of Vance County v. Town of Henderson (N. C.), 79 S. E. R. 442)

The Supreme Court of North Carolina holds that the town was not liable for the amount, nor for any part thereof, paid by the county on account of the maintenance and care of persons afflicted with small-pox, while they were quarantined by the county, during an outbreak of small-pox in the county and town, which latter is in the county, in the years 1911 and 1912. If Section 4508 of the revisal of 1905 ever imposed any liability on a city without a quarantine officer, the legislature intended by Section 21 of Chapter 62 of the Acts of 1911 to establish a new rule of liability for the expenses of quarantining diseased persons and to require that they should be paid by the county which had a quarantine officer, unless the town in that county, in which the expenses were incurred, had appointed a quarantine officer and undertaken for itself, by a system of quarantine, to isolate or segregate persons having contagious and other diseases, which were mentioned in the act, within its corporate limits, or, if possible, to take charge and supervision of the patients at their respective homes.

There is no good reason why the town or city should be charged with the double burden of paying its full lawful share of the county taxes and also the expenses of quarantine within its limits, from which it receives no more benefit or advantage than other sections of the county. But if it is not satisfied with the county system of quarantine, or for any other reason it establishes one of its own, and thus chooses to regulate its own affairs in this respect, it is proper that it should bear the expense and not the county. It is not just that the county should pay the expenses of the city quarantine when it can have no part in fixing or controlling the amount to be incurred or in adopting regulations or methods for the economical administration of the law, and the same rule applies with equal force to the city, when entire control is in the hands of the county authorities.

That Section 21 of Chapter 62 of the Acts of 1911 was repealed by Section 9 of Chapter 181 of the Acts of 1913 was not important in this case, as the county paid the expenses for which it here sued in 1911 and 1912, before the passage of the act of 1913, which should be given prospective operation.

Physicians Entitled to Recover for Treatment of Injured Employee—Term of Service

(Gray v. Lumpkin and Thomas (Tex.), 159 S. W. R. 880)

The Court of Civil Appeals of Texas on this appeal of the defendant, Gray, affirms a judgment against him, in favor of Drs. Lumpkin and Thomas, the plaintiffs, for services rendered to an employee of the defendant Gray, who had his leg broken by a horse falling on it. The court says that an employer as a rule is not, in the absence of an agreement or some stipulation, under legal obligation to furnish medical attendance for an employee who falls sick or is injured while engaged in his duties. Here, however, the defendant at the time proposed to pay the bill for services, if certain physicians were employed. The question was whether Dr. Thomas, of the partnership of Lumpkin and Thomas, was one of the physicians named by the defendant. There was no question raised as to the reasonableness of the charges made for the services and none that the defendant did not authorize one Kerr to employ medical assistance. The only controversy was a quibble whether a letter written by the defendant and sent by Kerr was addressed to two or three physicians, that is, whether it was addressed to Drs. Walker and Johnston, or to Drs. Walker, Johnston, or Thomas. But when life is at stake, or great bodily suffering, demanding immediate relief, an exact adherence to the letter of instruction should not be demanded from the agent or from those dealing with him. Laws are doubtless enacted and should be administered for the welfare of humanity, and in a case of this kind the court feels that the services and skill of the plaintiffs should be compensated when secured under the circumstances here shown.

It appeared from the defendant's testimony that before the employee was discharged from treatment the defendant informed the plaintiffs that he would not pay them, as he had not employed them to treat the injured man. On this proposition the defendant requested the court to charge the jury that they could not allow the plaintiffs for anything after such denial of liability. He did not discharge the plaintiffs from the case, but denied that they were ever in his service. Had they quit the case it would, under the statement of the defendant then made, have amounted to an admission that they were never in his employment. The court does not think that there was error in refusing the requested charge. The jury having found that the plaintiffs were employed to treat the case, that employment continued while the case demanded their services or until they were discharged by the defendant. Where two or more persons enter into a contract of a continuing nature, one of them cannot, by his own act, discharge himself from liability and put an end to the contract, without the consent of the other, unless there is an express power of defeasance reserved in him. If the plaintiffs had undertaken to treat the case under an employment to do so, as found by the jury, they were legally bound to continue until the patient was in condition to be dismissed from further treatment.

Manslaughter in Death from Attempted Abortion

(State v. Harris (Kan.), 136 Pac. R. 264)

The Supreme Court of Kansas holds that an information, alleging the use of a certain instrument to procure the abortion or miscarriage of a woman pregnant with a vitalized embryo, not necessary or medically advised to be necessary to preserve her life, resulting in her death, charges a crime which would be murder at the common law and which is manslaughter in the first degree under Section 12 of the crimes act of Kansas. Although such instrument was used with the assent of the woman for the sole purpose of procuring an abortion or miscarriage, still such use and purpose being immoral, violative of the law of nature, deliberate in character, reckless of life, and necessarily attended with danger to the mother and likely seriously to injure her, if her death result, the common law will imply malice and hold the person so using such instrument guilty of her murder, regardless of whether she was pregnant with a quick child or with a vitalized embryo.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 22-26.

Missouri Valley Medical Association, Lincoln, Neb., Mar. 26-27.

CHICAGO MEDICAL SOCIETY

Regular Meeting, held Jan. 7, 1914

The President, DR. CHARLES P. CALDWELL, in the Chair

Artificial Pneumothorax in the Treatment of Pulmonary Hemorrhage

DR. ETHAN A. GRAY: Instead of the term "artificial pneumothorax," let us say "compression of the lung." Compression applied to a bleeding lung will, in most cases—not all—stop the hemorrhage. When the bleeding point is protected by adhesions against sufficient collapse of the lung substance, compression will not stop the bleeding. When the hemorrhage originates in a thick-walled cavity, the possibility of stopping it by compression is doubtful. In hemorrhagic cases, as well as in non-hemorrhagic cases, the production of a pneumothorax rests chiefly on one factor, a free pleural cavity. Without this there can be no lung compression. Hemorrhages occurring in pneumonoconiotics cannot be treated by lung compression, first, because of the consistency of the anthracotic lung, and, secondly, because of the danger of shutting off some of the already diminished and much-needed aerating lung tissue. Ordinarily, in producing artificial pneumothorax bilateral disease is a contra-indication; the same rule applies here. In far-advanced bilateral conditions, however, antecedent pleurisy with its adhesions has usually already settled the matter for us.

In cases of hemorrhage demanding operation, it is obvious that no great amount of time can be spent in preliminary study of the case. In the non-hemorrhagic cases it is well to have the patient under observation for several weeks until a general decision regarding the operation can be reached. Often a patient presents a bilateral condition which, *per se*, excludes operation. Within thirty days one lung, affected in lesser degree, perhaps, clears up, thus creating a proper condition for the collapse of the cavernous lung. Again, such marked improvement in the local and general condition may be observed after a period of rest that the operation becomes unnecessary, and therefore unjustifiable.

The most important step in the administration of nitrogen in lung compression is to determine the spot where a free pleural cavity may be found. Last spring I reported four cases of hemorrhage treated by compression of the lung. In these four, one patient died of bronchopneumonia, which developed at the time of or somewhat before the compression. Two have had no recurrence of hemorrhage. The fourth patient, after having had three fillings, had no further bleeding. He gained markedly in weight and strength until early in July, when he again began to bleed. The blood loss was large and flooded both lungs. The offending lung was immediately compressed, but bronchopneumonia developed and death occurred in a few days. The results in this case have led me to prolong the compression in subsequent cases. Since then I have used this method in six other cases, with no return of the hemorrhage in four, death from bronchopneumonia in one, and a checking of bleeding in one, with rapid decline.

Lung compression is indicated in severe pulmonary hemorrhage cases and should be made as soon as possible to forestall a fatal bronchopneumonia. It is of no avail once bronchopneumonia has become established. The lung should be kept in compression for at least four months. Aside from the value of compression of the lung as a hemorrhage agent, one cannot underestimate the influence of prolonged rest on the tuberculous process.

Treatment of Tuberculosis by Pneumothorax

DR. JOHN B. MURPHY: There are many things to learn about tuberculosis. We are unsettled as to the location of the primary lesion. Is it a direct inspiratory infection? Is it primarily of gastro-intestinal admission? Is not the skin overlooked entirely as a means of admission of the bacilli into the circulation? All these questions are of prime importance in the management of tuberculosis, and should be settled. When the bacilli are admitted, how do we know that they are arrested? How do we know that a tuberculosis is present? Tubercle bacilli are a late manifestation—often a very late manifestation—of tuberculosis; but we are still in that stage at which the average man is satisfied if he can make a diagnosis on the finding of the tubercle bacillus. The diagnosis of tuberculosis must be made long before bacilli are present in the sputum. On the early diagnosis depends the result of treatment. What rôle can we play in aiding the repair or healing of that tuberculous process? How does repair take place, and what contributes to it? Repair or resistance to tuberculosis consists of (*a*) local and (*b*) constitutional resistance. Tuberculin is one agent we can use. I have been using it since it was introduced to the profession, first in large doses and then in small doses, and finally I came to the "individualization" dose. There is no average dose; there is no common dose; there is a dose for one individual and that individual alone. I become more enthusiastic over treatment by tuberculin every day.

In the local management of tuberculosis of the lung, compression of the lung by artificial pneumothorax is now the dominant treatment all over the world, because it places the diseased lung at rest. When shall we use this treatment? I was shocked a short time ago, in looking over the literature on pneumothorax as a treatment for pulmonary tuberculosis, to read that some of the ablest men suggested it as the treatment for tuberculosis when it had not yielded to other means. The old appendicitis proposition all over again. Why must we wait until there are cavities in the lung? Why must we wait until there are hemorrhages? Why must we wait until a whole lobe of a lung is involved? Use it now. Pneumothorax is a mechanical aid to Nature in the process of cicatrization and encapsulation of a tuberculous focus in the pulmonary tissue.

What are the changes which pneumothorax produces when properly and timely administered? It lowers the temperature rapidly by the rest which is given the focus of infection. It stops the expectoration rapidly. With the expectoration and the absorption stopped, of which the temperature elevation is a manifestation, the patient's general condition improves and he takes on weight. There are less likely to be recurrent hemorrhages.

DISCUSSION

DR. JOHN RITTER: We need social help in the treatment and cure of tuberculosis. The medical aspect alone will not help us out sufficiently to arrest the tuberculous process; consequently the social question must be taken into consideration. The old tuberculin is good when used for diagnostic purposes, but for therapy it should not be used. I use tuberculin quite extensively, and follow Wright's method. When I get to the point at which a patient is doing well, I remain there. The early diagnosis of tuberculosis as described in the text-books is misleading. When the text-book description is positive, the condition will long have passed the incipient stage. There is undoubtedly a so-called preincipient stage, before there are any physical findings in the chest. It is then that a diagnosis should be made.

Before we advocate the use of anything for the treatment of pulmonary hemorrhage, we must ascertain if the hemorrhage is really pulmonary. Pulmonary hemorrhage may be the initial sign of tuberculosis, or it may be the terminal stage of a pulmonary condition. I think that the percentage of cases that can be treated with pneumothorax is very small. Then, again, the percentage of patients who will retain gas—into whom we can get the gas—is very small. The percentage of those that are really benefited, producing arrest in the process, is again small, so that the percentage of patients that are really bene-

fited by the treatment is meager. It will never be a means of treatment in a great many cases of pulmonary tuberculosis.

DR. CLARENCE L. WHEATON: The induction of artificial pneumothorax is an epoch in the history of tuberculosis. I regard it as a discovery of as great practical value as the discovery of the specific organism. The cessation of hemorrhage and of cough, the diminution of temperature and the general sense of well-being mark practically all of these cases. If we can succeed in obtaining a serum possessing antitoxin properties which might neutralize even slightly some of the secondary phenomena of tuberculous infection, we shall be near the goal of the greatest scientific achievement.

DR. W. B. METCALF: We have not fully appreciated the value of tuberculin as a diagnostic agent, and we have been slow to recognize the value of artificial pneumothorax as an agent in the treatment of tuberculosis. I should like to ask Dr. Murphy if, in cases in which both lungs are infected, he would think it a good plan to inject first one side, and after a period of time the other side? Injection of normal salt solution into the pleural sinus in cases in which there have been recent adhesions has been advocated by some authorities, for the purpose of opening the pleura sufficiently to allow the inflation with nitrogen. I should like to know if Dr. Murphy thinks this is a good policy.

DR. ETHAN A. GRAY: I do not consider that the percentage of cases to be treated by pneumothorax is limited. If you wait a long time, it is limited, but it is not right to wait. I think that Dr. Murphy put it very well—it is the old appendicitis proposition over again. I prefer to make my diagnosis, if I can, long before I find the bacilli.

DR. JOHN B. MURPHY: I have had only a small number of bilateral cases, and I am not in a position to give an opinion on the value of the treatment in these cases. In my original paper I suggested that it be used in the single lobe cases. I was taken to task, however, for that, and it was said that the bilateral cases did remarkably well. Therefore I feel that the opinion of men who have had a larger number of these cases should be accepted rather than mine.

NEW YORK ACADEMY OF MEDICINE

Meeting held Jan. 15, 1914

The President, DR. WILLIAM H. POLK, in the Chair

Intestinal Stasis

DR. JAMES T. CASE, Battle Creek, Mich.: In every instance in which roentgenoscopy has been made following a short-circuiting operation, I have observed retrograde peristalsis in the colon. In many of these cases there was also a reflux of colonic contents through the anastomotic opening into the small intestine, and the resulting stasis converted the terminal ileum into a veritable colon of indefinite length. In some cases the terminal ileum was found to have a caliber of the colon itself, so that it was not easy to differentiate ileum from colon. There is another class of cases in which ileal stasis has existed and no adhesions have been found. A study of these cases leads to the conclusion that a large proportion of ileal stasis is due, not to kinking or adhesions of the terminal ileum, but to incompetency of the ileocolic valve, or to spasm of the ileocecal sphincteric mechanism, or to a combination of these two factors. Certain striking cases have supported the idea that normal ileal stasis is increased in all conditions leading to spasm, probably most marked in acute appendicitis, and less marked in chronic appendicitis. My observations give confirmation to the belief that the normal ileocecal valve is thoroughly competent. Without exception, when the ileocecal valve has been found incompetent to the enema on one occasion, it has been found incompetent at all subsequent observations. In more than fifty cases we have definitely proved the regurgitation of ingested bismuth from the colon back into the ileum, no new bismuth meal having been taken in the interim. In every instance in which the ileocecal valve proved incompetent to the enema, at operation the surgeon found gas or fluid distention of the terminal ileum in spite of thorough efforts at preoperative bowel-cleansing. The incompetency has been cured in a number of cases by a simple surgical procedure, consisting in the placing of several sutures in such a manner as to restore the invagination of the bowel without narrowing its lumen. The operation is practically bloodless, does not involve opening the peritoneum, and is quickly accomplished.

Roentgenoscopy in Gastric and Duodenal Diagnosis

DR. ARIAL W. GEORGE, Boston: The greatest value in the Roentgen diagnosis of gastro-intestinal diseases is the possibility of classifying the cases into medical and surgical. If one relies on the Roentgen-ray evidence alone a considerable number of acute, simple peptic ulcers will be overlooked. I am convinced that six-hour gastric stasis is the least important factor in Roentgen bismuth diagnosis. The presence of gastric spasm is one of the most potent sources with which one has to contend; it may be due to gastric or duodenal ulcer, gall-bladder disease, appendicitis, renal calculus, diseases of the nervous system, chronic morphin and nicotin intoxications, the vague clinical symptom-complex known as vagotonus, and other causes. The positive diagnosis of acute, simple, peptic ulcer is frequently impossible. With chronic gastric ulcers the situation is different; here there is the presence of scar tissue, or considerable erosion and penetration, and the bismuth line shows excrescences, outpocketings, niches and hour-glass contractions. Usually repeated examinations will clear up the diagnosis. The evidence of perigastric adhesions is usually best obtained by fluoroscopic examinations, and this method is of value in chronic ulcers in the cardiac or median portions of the stomach. By means of plates taken in the lateral position, views may be obtained of the anterior and posterior walls of the stomach, and a lesion detected that cannot be observed in any other way.

As yet we have failed to find a single case of gumma of the stomach. Cancer patients are often made so comfortable by medical means, under a mistaken diagnosis, that they easily pass far beyond the operative stage. We must try to make a diagnosis of cancer before one can be made by clinical methods, if the patient is to have the advantage of early and radical operation. In the bismuth-Roentgen method we have a positive aid, especially in that large number of cases in which the carcinoma is situated in the fundus of the stomach. It is possible to demonstrate on the negative a cancer as small as an average ulcer would be. The normal condition of the duodenum can be detected in every normal individual, and the presence on the plate of a constant defect in the cap of the duodenum means a real pathologic condition. No patient with duodenal ulcer should be operated on unless the bismuth examination shows a definite, constant deformity of the "bishop's cap." In this connection the negative diagnosis is as valuable as the positive; every patient in whom a normal duodenal cap can be demonstrated has no indurated or surgical ulcer of the first portion of the duodenum. Adhesions resulting from repeated infections of the gall-bladder can frequently be detected by their attachments to the antrum of the stomach, the first or second portions of the duodenum, the hepatic flexure or the transverse colon. Occasionally, but not often, the shadow of an enlarged bladder can be seen, but not often enough to warrant a positive diagnosis.

DISCUSSION

DR. WILLIAM H. STEWART: It seems to me that the end of exploratory laparotomy is at hand. The Roentgen diagnosis is only one of the means toward reaching conclusions. It should always be combined with the clinical findings and laboratory reports; this is particularly true of diseases of the gastro-intestinal tract. While I believe in the direct positive method in acute peptic ulcers, or erosions of the stomach, one must be guided by the symptom-complex if one hopes to make a correct diagnosis; in chronic ulcerations one is not confronted by difficulties so great, since here one can obtain direct ocular evidence. Too much importance cannot be laid on the necessity for the earlier use of the Roentgen ray in the diagnosis of carcinoma. Hypermotility, when not caused by carcinoma of the fundus, or achylia gastrica, or chronic gastritis, associated with actual persistent deformities

in the bulbus duodeni, make the diagnosis comparatively easy and should be more readily taken advantage of by clinicians in any questionable case.

There seems to be considerable difference of opinion as to when ileal stasis is present. Some writers assert that no case is one of ileal stasis unless the bismuth meal is retained in the ileum at least twenty-four hours. It is my belief, however, that no hard-and-fast rule can be made, as it depends in a great measure on the amount of obstruction. As a matter of fact, the important point to be cleared up is what is causing the retention. Chronic appendicitis with accompanying adhesions is, in my experience, the most common cause of ileal stasis. Competent roentgenologists have now reached the goal where they can demonstrate a patent appendix and ascertain whether or not these accompanying adhesions are causing an obstruction of the ileum.

DR. LEWIS GREGORY COLE: In 1903 I detected my first case of ileocecal insufficiency, and I believe that this is the greatest cause of ileal stasis.

DR. ALBERT CHARLES GEYSER: I have not been convinced of the seriousness of insufficiency of the ileocecal valve. The very fact that 10 per cent. of all valves examined are defective leads one to take rather an optimistic view of it. Other things being equal, I can see a conservativeness in such a weakness, and it may act occasionally as a real safety-valve.

DR. ANTHONY BASSLER: The point made by Dr. Case that these kinks and bands but rarely have to do with actual stasis, is an important one for surgeons to remember. In my experience the so-called ileal kinks are a most common finding and yet they but seldom cause stasis mechanically. To the theory of ileal stasis being caused by incompetency of the ileocecal valve, I would add that of primary toxemia in the alimentary canal, wherein the stasis is caused by degeneration in the sympathetic nerves and ganglionic cells. In this way the nerve balance of tonus is interfered with so that deficient motility and some degree of dilatation with attenuation of the intestine is responsible for the delay in transit of its contents. I believe that one cannot make a diagnosis of gastric or duodenal ulcer along such lines as rapid emptying of the stomach, reverse peristalsis, etc. The safe way of diagnosing these conditions is along the lines of pitting, diverticula or filling defects. Recently a well-known roentgenologist and a serious worker featured the diagnosis of gastric and duodenal ulcer along the lines of stasis in the stomach. In 120 cases of proved duodenal ulcer, stasis was observed by me in thirty-five, making 28 per cent. From the Mayo clinic, Dr. Eusterman has just reported 776 cases of duodenal ulcer, also proved by operation, with stasis present in only 26 per cent. In my experience, stasis is present in gastric ulcer in 34 per cent., whereas in 324 cases in the Mayo clinic it was present in only 29 per cent. It is important to state that in the cases in the Mayo clinic and in my own the diagnosis of stasis was made by the test meals, the only sure way of doing it. Therefore, one set of men feature the diagnosis on the basis of rapid exiting, and another by delay in exit, whereas the truth is that neither one is characteristic of ulcer, although either one may be present.

NATIONAL CONFERENCE ON RACE BETTERMENT

Held at Battle Creek, Mich., Jan. 8-12, 1914

(Continued from page 484)

The New Human Race

DR. J. H. KELLOGG, Battle Creek, Mich.: Man has improved every useful creature and every useful plant with which he has come in contact, with the exception of his own species. Why talk about a new race when the average length of human life has doubled within a couple of centuries, and when greater progress in the arts and sciences has been made within a century than within all the previous centuries of human history? The upward trend relates exclusively to art, science, ethics and other matters pertaining to the intellectual and social life of the race. Racial and national pride naturally lead us to believe that the race is advancing.

The fact that the average length of human life has more than doubled in the last two hundred years has been accepted as conclusive evidence that the vital stamina of the race is improving. Notwithstanding, this progress may be more apparent than real and permanent. Our birth-rate is steadily declining. Of twenty million schoolchildren in this country not less than 75 per cent. need attention for physical defects which are prejudicial to health. Insanity and idiocy are increasing. Diseases of vice, the most insidious enemy of this and future generations, are spreading rapidly, according to medical men. We have lacked the moral courage to recognize and fight this scourge. Alcohol and drug habits are constantly adding new victims. Suicides are increasing and now reach the enormous total of about 15,000 annually. The important organs of the body are wearing out too soon. The death-rate from the degenerative diseases of the heart, blood-vessels and kidneys, including apoplexy, has increased over 100 per cent. since 1880. These diseases claim over 350,000 lives annually. Fully 60 per cent. of these deaths are preventable or postponable, if the disease is discovered in time. Periodic health examination would detect these chronic diseases in time to check or cure them. The annual loss from pneumonia aggregates 135,000 lives, a large portion of which is due to weakened bodily resistance from degenerative affections. Cancer claims 75,000 lives annually, and is increasing. Pellagra is increasing rapidly in our Southern states. Over 150,000 Americans are destroyed annually by tuberculosis. We know how to prevent it, but our taxpayers object to the expense and leave the battle almost wholly to charity. Over 25,000 Americans are still sacrificed to the preventable filth disease, typhoid fever.

Opinions are divided as to the causes of race degeneracy. There are two great causes, heredity and environment. It may be impossible to say which is the more active. The results of recent researches, however, seem to indicate that the influence of environment may be much greater than some have supposed. The blighting influence of syphilis, alcohol, tobacco and other drugs, gluttony, sensuality and other vices cannot be questioned. We need not return to savagery to be healthy, but we must see that the air we breathe is clean, that the food we eat is wholesome and that the water we drink is pure. We must cultivate clean blood instead of blue blood. Society must establish laws and sanctions which will check the multiplication of the unfit. Eugenics and euthenics must become dominant matters of study and concern. The beginnings of chronic diseases should be detected and arrested.

Every board of health and official health agency should be actively engaged in the battle against disease and degeneracy. This work should not be left to individual initiative. The establishment of a national department of health will provide a central bureau by which to unify the work.

Some Efficient Causes of Crime

R. B. VON KLEINSMID, Jeffersonville, Ind.: The conflicting conclusions heretofore reached in criminology are: 1. To a greater or less extent, every man is guilty of crimes, and his detection, conviction and sentence avoided only because of concomitant circumstances. 2. All criminals are vicious men, and consequently it is the duty of society to hunt them out, wherever they may be found, in order to mete out to them that degree of punishment appointed by legislation for the particular crime committed. 3. Transgressors of the law would be few, if any, except for a peculiar and contaminating social environment. 4. All criminals are defectives; no man of normal mental and physical status commits a crime. Until recently criminology was regarded as a legal science exclusively. Now there are indications that there are many who believe it to be purely a social science. Then there are those who insist that it has its origin in medicine and psychology.

Any one who has labored among those convicted of crime is impressed with the fact that they are beings of retrograde type. Responsibility for crime in the manifestly subnormal is quite out of the question; these will always be mere children and require a guardian. Crime is more than a mere accompaniment of defective mind. It is the natural outgrowth of

if possible. The idea developed that there was need of more

it was a new proposition. The first mention of a plan of

faulty mental processes. This doubtless accounts for the fact that punishment cannot cure the criminal or even deter others from committing crimes. Treatment, not punishment, is needed.

Sterilization

MR. H. M. LAUGHLIN, Cold Spring Harbor, N. Y.: There are two sides to the problem of the treatment of criminals—the constructive, which has to do with the bettering of the two levels of humanity, and the negative, which has to do with cutting off the degenerate ones. Many remedies have been proposed for effecting the betterment of humanity by eliminating its lower levels. Segregation alone is not sufficient, and sterilization must come to its aid.

Uncinariasis

DR. LILLIAN SOUTH, Bowling Green, Ky.: The hookworm is found in every country in the world which lies between 30° north and 36° south latitude. Hookworm disease simulates consumption, and often these patients are treated for tuberculosis for years. Kentucky ranks first in the tuberculosis rate because we have so much hookworm disease which is mistaken for tuberculosis. Infection with this disease also retards development, a child of 15 or 16 not reaching the physical development beyond that usually expected in a child of 12. Some cases of pellagra were entirely cured when the patients were relieved of the hookworm. The peculiar skin eruption is one of the symptoms of hookworm disease. Whether there is any connection between the two diseases of pellagra and hookworm is not known, and these cases may have been wrongly diagnosed as pellagra.

Kentucky is spending five millions a year for the education of the children, but the children cannot go to school because of hookworm disease. There are not enough able-bodied men in some of the towns in Kentucky to hold the offices. Hookworm disease is not alone a disease of the poor. The whole thing, in the matter of prevention, is a question of a sanitary water-closet system. The State Board of Health of Kentucky has devised a sanitary water-closet with separate tank arrangement, built of cement, which is fire-proof and does not need to be cleaned out. By the use of these sanitary water-closets it is expected that we shall revolutionize the whole South in combating this disease.

Function of Individual, City, State and Nation in Bringing About Race Betterment

DR. W. A. EVANS, Chicago: The individual can contribute toward race betterment by keeping his body in better condition, and by caring for a better machine than is the present average machine. By bringing up the average of capacity in the human machine we shall bring up the average of undertaking by the human machine. We are fairly well equipped for the ordinary work of every day, but the average man is totally unequipped when called on to do work outside of that usual routine—any extraordinary or unusual thing. Therefore, my first suggestion is that the individual shall contribute to the movement for race betterment by maturing and maintaining a better machine than the average, as it at present prevails. My second suggestion is that those who constitute this audience, and that greater audience to which the arms of this audience will in time extend, enlist themselves in those eugenic movements that have as their object the correcting of these errors at the point of origin. It has been suggested that a part of this movement is corrective in character—that a part of it has to do with that part of society which is distinctly antisocial, and that measures for control must be legislative in activity, must be administered by government, and must be corrective in character. It was suggested that there is another side to this question, and that is the side of positive eugenics. My suggestion is that you lend your support to this side as well as to the other side.

The constitution of the United States twice refers to the activities of the government in behalf of the welfare of the people. Those references are in the same articles of the constitution in which there is given power to the national government to protect its people against armed invasion. It is there specified that the government shall have the right to maintain armies and navies and do such other acts as are necessary for the protection and the welfare of the people. In the first of these references the inference clearly is that the legislators had in mind acts for the protection of the people against invasion from without. In the second reference there is a broader authority, and it is evident that those who were conferring that authority had something else in mind. In this country we have a machine for the care of those who have developed disease. There are two hundred thousand men and women who are engaged in that work. About a hundred and fifty thousand of them are fairly well trained, technically trained, in the work that they are carrying on. Then there are at least fifty thousand others who are more or less broadly trained, who are doing the work of parts of this curative machine. But we need something more, and that is the machine for doing the work of personal hygiene.

My criticism of the work of city, state and national health agencies is that they are in reality departments of ill health, and they contribute but indirectly to the question of health, to the promotion of human efficiency. They contribute but indirectly to race betterment. They contribute but indirectly to the purifying of the stream. My suggestion is that they gain something more of vision; that they broaden out, and that they see man in the large; that they see society in the large.

MISS M. E. BINGHAM, Rochester N. Y.: Rochester has just adopted a new point of view regarding municipal responsibility. Premature death, unnecessary inefficiency and sickness are due to ignorance. It is the function of the city to place within the reach of every person the necessary knowledge. People have derived their knowledge about these things in a haphazard way, from hearsay, from newspapers and magazines. In Rochester the Woman's Educational and Industrial Union sent a petition signed by three thousand taxpayers to the board of education, asking that instruction be given in physiology, hygiene, nursing, dietetics and things of that description, and the board of education has agreed to do this. There will be a course extending over twelve weeks, two lessons of one hour each a week, one by a doctor, and one by a nurse, and in this course there will be taught physiology, the care of the child, hygiene, psychology of adolescence, first aid, emergency work, causes of disease, prevention and research of disease, rational principles in the care of disease, household and civic hygiene, and motherhood. If the women of Rochester appreciate this course by attending, the work is to be enlarged.

History of the National Board of Health

DR. STEPHEN SMITH, New York: The idea of a national board of health began as early as 1866, in the American Public Health Association. The idea naturally grew of having not only a municipal authority and a state authority, but also a national authority. The first suggestion was made by the health officer of the city of Washington, who was prominent in the first movement to organize a national board of health. The first obstacle was the states' rights idea. There was a disposition on the part of the members of Congress to oppose the creation of a board of health that would interfere with the state and municipal authorities. Their conception of the board was altogether wrong in that respect. It was not intended to interfere with the affairs of the states and cities any further than the national government now interferes.

Not much headway was made for several years, but when the great epidemic of yellow fever in 1878 made its appearance, and its devastations were so great that neither municipal boards nor state boards of the South could control it, there was a call for general aid, not from the government, but from voluntary organizations. A Mrs. Thompson of New York contributed a very large sum to what was then known as the Marine-Hospital Service, the head of which at that time was Dr. Woodworth. This fund was used to relieve distress and promote efforts to control the epidemic. A commission was sent south after the epidemic had subsided to study the question of yellow fever and its prevention. Mrs. Thompson provided that the commission should find the cause,

the importance of federal activity cannot be overestimated. or municipality in which the disease occurs in its suppression

if possible. The idea developed that there was need of more thorough quarantine in preventing the admission of yellow fever.

The first bill was introduced into Congress in 1879. I drew the bill after the plan of the Department of Agriculture, which was then comparatively new. It fitted exactly the ideal that we had of what a national board should be. We wanted a minister or secretary of health, who should be a member of the cabinet. We planned that the organization should take the form of the Department of Agriculture in the general work of promoting public health and coordinating, as far as possible, all of the energies of the country to prevent epidemics coming into the country. This bill was introduced into the Senate, but it went into the pigeonhole of some committee and never appeared again.

Toward the close of that epidemic the feeling in the South became very much changed in regard to a national organization. They found that they had to call on the country at large for help, and the question arose, Why should not the national government aid us in these extremities? The objection was that it would interfere with states' rights. This gradually subsided under the pressure of the epidemic and its devastations, and in 1879 opinion had become very strong that Congress should take some action. A bill was then drawn up that created a national board of health, but it was drawn in such a way as to be of temporary effect. It was rather a board for investigating the question why there should be a board of health, why should there not be a national department of health. It had some powers of investigation, and it had an appropriation of $50,000 for temporary work. When the question came to vote, it was voted that even this organization should not be allowed to continue more than four years. It was first limited to one year, but finally it was extended to allow it a lifetime of four years for its work.

It made a general investigation of our quarantines, and published a good deal of matter. At the same time the Marine-Hospital Service, headed by Dr. Woodworth, began to raise the question, Why should not the Marine-Hospital Service govern these quarantines? The Secretary of the Treasury, in 1880, recommended that the powers of the Marine-Hospital Service should be extended to include the quarantines. That was the first inroad that was made in favor of a national authority governing quarantines, and it has gone so far that they are now largely under the management of the United States Public Health Service. After the first year the fear of yellow fever subsided, and the old objections began to be revived. In 1882 the question arose as to the funds that were being used by the national board, Why should that not be turned over to the Marine-Hospital Service, that was now doing a good deal of sanitary work? Under the direction of President Arthur it was turned over to the Marine-Hospital Service. This deprived the national board of all means of doing anything; it had the authority to investigate, but no means to carry on investigation, and practically that was the end of the national board. I do not know that that law has ever been repealed; but it remained a national board for years without any power to do anything, and finally lapsed from mere lack of efficiency or ability to do anything. That is the history of the early movements to have a national board of health.

The National Department of Health

DR. HENRY B. FAVILL, Chicago: The American Medical Association has a central council known as the Council on Health and Public Instruction. My official relation to that Council has led to the invitation to me to present this subject. I shall not go into an elaborate argument as to the need of a national department of health. We are all convinced of that. I shall not talk about the details of construction or organization. Those are matters of detail. I am here to present to this conference a statement as to the status of the matter, as to what has been done and what is being done, and what, so far as we know, the prospects are. In the last few years this subject has received attention in a way that would lead one not familiar with the facts to suppose that it was a new proposition. The first mention of a plan of organization of a board of health appeared in the proceedings of the American Medical Association in 1871, following shortly after the organization of state boards of health in Massachusetts and California. The proposal first took the form of a voluntary council made up of representatives from the various state boards of health. The following year a resolution was adopted by the American Medical Association, asking Congress to establish a national sanitary bureau. In 1873, the President of the American Medical Association stated that a bill for this purpose had recently been introduced into Congress.

In 1874 the question was discussed by the American Medical Association under the title of "Waste of Life," a mere variation from our modern title of conservation of life, in which the subjects which would now be regarded as coming under the conservation idea were considered and the organization of state and national departments of health was urged. During the following year the discussion went on, culminating in the establishment of a national board of health in 1879, the duty of which was to report to Congress a plan for a national health organization. This board did not get anywhere and went out of existence through the failure of Congress to make an appropriation, because the appropriation had been diverted into other channels.

In 1886 a bill was introduced in the House of Representatives providing for a bureau of health. In 1891 a bill was introduced in the lower house providing for a department of health in the Marine-Hospital Service. In 1892 a bill was introduced in the House of Representatives. In 1897 the Springer bill was introduced in the Senate. None of these bills went farther than the committee stage.

In 1907, in the session of the American Medical Association, the Committee on Medical Legislation reported that the preliminary draft of a bill creating a national department of health had been drawn up by Dr. Barchfield of Pennsylvania, that the American Association for the Advancement of Science had created a committee of one hundred to consider methods for establishing a national department of health, and that this draft had been turned over to Professor Fisher, in order that it might be redrafted by some legal member of the committee. It was voted that the details of the plan be left to the Committee of One Hundred, to which the association pledged its support.

From this time on the effort of the American Medical Association has not exactly merged, but has been strongly coordinated with the efforts of a civic nature, of which Professor Fisher has been the exponent. There was no further agitation on the subject until Feb. 10, 1910, when the first Owen bill was introduced in the Senate, providing for a department of public health under a secretary of public health. This bill assembled the different bureaus in the government instead of creating a new department. It was given jurisdiction over all things relating to human and animal life. It was referred to the Senate Committee on Public Health and National Quarantine, before which it had a large number of hearings, but was never reported on, and died in committee with the expiration of the Sixty-First Congress.

I want to emphasize at this point that the American Medical Association from the beginning has been in favor of a Department of Health with a secretary in the cabinet. There was a time when, by reason of opposition, particularly in the time of President Roosevelt, who was positively opposed to a cabinet officer and to anything except a bureau of health, the American Medical Association agreed to anything which would be a beginning in this great movement. But that plan never having gone through, the general trend has been back again to the original idea of a Department of Health with a secretary of health in the cabinet. We are now standing for a Department of Health.

I feel justified in advancing the following propositions as generally accepted: 1. The necessity of some central federal health organization is agreed on by all those familiar with the situation. 2. While recognizing the paramount importance of state activity, owing to our existing form of government,

the importance of federal activity cannot be overestimated. 3. The initiative of the present movement is largely due to the American Association for the Advancement of Science, in the organization of its committee of one hundred, which movement has been from the beginning supported and endorsed by the American Medical Association. 4. The American Medical Association is and always has been fully committed by its repeatedly expressed opinion and official reports to the support of a national Department of Health.

While the direct results secured by the efforts of the past forty years may not be entirely gratifying to the friends of this movement, the indirect or reflex effect of the continued agitation for better public health organization has been the stimulation of public health function, both federal and state.

Here is where we are to-day: Following the advent of the present administration and the calling of a special session of Congress last April, a conference was held in Washington, Monday, May 5, 1913, attended by the Council on Health and Public Instruction, the special committee on national health of the American Medical Association, and Professor Fisher, of the Committee of One Hundred of the American Association for the Advancement of Science. After protracted discussion, Professor Fisher formulated a program which was unanimously adopted, which included the following points: 1. A committee should be appointed to see President Wilson the next day, May 6 [which was done], and to communicate to him the result of the conference, requesting him (*a*) to decide on an administrative policy concerning public health legislation; (*b*) recommending that he definitely advocate the establishment of a Department of Health; (*c*) that he cooperate with us in securing a Committee on Public Health in the House of Representatives; (*d*) that he call a White House conference on public health similar to the Governor's Conference on Conservation; the object of this conference to be to promote the success of the President's policy, and if necessary to aid in framing that policy; (*e*) that at the next regular session the President send a special message favoring public health legislation, or else emphasize it in his regular annual message; (*f*) that the President select for the First Assistant Secretary of the Treasury some one interested in public health. 2. We should support the President in securing such public legislation as he decided to recommend.

I call your attention to the fact that the program adopted by the representatives of the American Medical Association and the American Association for the Advancement of Science pledged these two bodies to the support of such public health legislation as President Wilson might see fit to recommend at the next session of Congress. We are justified in believing that when this subject is next taken up in Congress it will be as an administrative measure. I call your attention to the degree to which we have put our interests in the hands of the administration. We have not only referred it to the administration, we have not only asked for a definition of policy, but without knowing what that definition of policy is going to be we have agreed to support that policy. Such a thing as that has hardly ever been done before; and yet I feel that we are perfectly safe in so doing. In the meantime, and in anticipation of such situations as may arise in the administration, the Council of the American Medical Association is going steadily forward in its campaign of public education on health issues, recognizing the fact that an active and intelligent public interest and support is of first necessity in securing the establishment of this department of health, for which the Association has steadfastly stood during its entire existence.

What the United States Public Health Service is Doing for Race Betterment

DR. H. W. AUSTIN, Detroit: I can only mention some of the work of the Public Health Service which relates to race betterment. Broadly speaking, all public health work promotes race betterment. Medical officers of the service are constantly making investigations as to the cause of unusual outbreaks of disease, publishing and distributing the results of their investigations and aiding the authorities in the state or municipality in which the disease occurs in its suppression or eradication. Examples of this are the pellagra investigations in several states, the prevention of malarial fever and hookworm, the investigations of the cause of the various outbreaks of typhoid fever and Rocky Mountain fever, etc. The government has also made extensive examinations of the waters of the Great Lakes and rivers of the United States to determine the amount and character of their pollution. The government is also making complete sanitary surveys of all dairy farms, including the production and transportation of the milk, and microscopic examination of the milk-supply of the large cities. Quarantine stations have been maintained at the large ports of entry by the service. Almost from the beginning of this government it has provided marine hospitals at the large ports of entry, where all American sailors could be cared for. The administration of these hospitals is one of the features of the service.

Some of the features of the service are closely allied to public health and eugenics. The service has established a tuberculosis sanatorium in New Mexico where patients from the United States marine hospitals are sent, and the results of this climatic treatment are most satisfactory.

At the hygienic laboratory in Washington a large number of medical officers are constantly engaged in scientific research work in preventive medicine. The morbidity and mortality statistics collected in various countries throughout the world are published in a bulletin that is distributed freely to all health departments and others interested in public health matters.

The prevention of the immigration of those who are diseased is a difficult but important function. The medical examination of five thousand immigrants in one day at Ellis Island, at New York, to determine whether there are any mentally or physically defective ones among them, is a most difficult task. It requires an expert alienist several weeks in many cases to determine whether a given patient is insane or not. The classification and sifting of those mentally weak is more important. This also requires much more time than is generally believed to be necessary, especially with those whose language and condition in life are entirely different from our own.

The Race Betterment Movement in Women's Colleges

DR. CAROLYN GEISEL, Rome, Ga.: If race betterment is to mean anything, it must begin with education for her who has to do with the race in its infancy. Does a college do it? There are two sorts of colleges in the United States, the coeducational institution, which gives to women the same kind of an education her brothers receive, and the other kind known as the finishing school, the female seminary. In these schools girls learn to dance, gibber French and German, read Greek, Latin and Italian, and paint on china, and do all this after the approved fashion. When she gets back from this school is she prepared for her holy place in life, her place in the world, which is the very root of all race betterment? She is not. Her body is broken. She gives her life, perhaps, for her first child, or else she lives and brings a weakling into the world which soon dies. One out of every two of all the children born dies before fully matured. I have for years cried out for a college that should teach women their own business. In Rome we established a chair of health and home economics in the college for women there, and since then two others have started the movement. One of the objects of this chair is to establish the young woman who comes there in health, so fixed and so definite, and so real, that when she is sent home she will not be the chief support of the doctor. This is accomplished by correcting the diet, by encouraging outdoor life, with physical exercise, and by regulating the dress. We see to it that the habit of self-drugging which prevails so much among the young women in colleges is put away, and do it by the efforts and offices of a resident physician.

It is a woman's business to do what God called her to do—and God called her to motherhood. Teach her to care for her health, and she will bring healthy children into the world.

(*To be continued*)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Annals of Surgery, Philadelphia

January, LIX, No. 1, pp. 1-144

1 Study of Pericolic Membranous Films and Bands. L. S. Pilcher, Brooklyn, N. Y.
2 *Pericolic Membranes and Lane's Kink. R. B. Williams, U. S. Navy.
3 Pericolitis Sinistra. J. R. Eastman and A. M. Cole, Indianapolis, Ind.
4 Cancer and Precancerous Conditions. W. L. Rodman, Philadelphia.
5 *Localization of Foreign Bodies within Tissues. A. J. Brown, New York.
6 *Pneumococcic Arthritis. K. Bulkley, New York.
7 *Use of Citrate Solutions in Prevention of Peritoneal Adhesions. S. Pope, San Francisco.
8 Gall-Stones and Other Calculi Among Laborers in Panama Canal Zone. H. C. Clark, Ancon, C. Z.
9 Interscapulothoracic Amputation of Shoulder with Complete Excision of Clavicle. A. E. Rockey, Portland, Ore.

2. **Pericolic Membranous Films and Bands.**—It seems to Pilcher as if sufficient clinical observation had now been accumulated to confirm and emphasize the teaching that right-sided pericolic membraniform veils and bands, crippling the peristaltic function of the cecum and ascending colon, are of frequent occurrence, and that when present they form a well-defined surgical condition which always is a menace as to the future, and in many cases has already become the cause of ill health and suffering. Whenever, therefore, the abdomen is opened for the relief of conditions involving right-sided symptoms, Pilcher advises that the operation should be so planned as to make it possible to explore for their presence and do whatever is necessary for their removal.

5. **Foreign Bodies within Tissues.**—In the method advocated by Brown a preliminary roentgenographic examination for the purpose of substantiating the diagnosis is made and the approximate position of the foreign body noted. The area of skin over the foreign body and a surrounding area of a few inches is then prepared in the following manner: Vertical and horizontal lines running at right angles to each other are painted on the skin with silver nitrate solution, thus laying the skin out into squares. The size of the squares can easily be made to bear a proper relation to the size of the foreign body on the one hand and that of the part to be prepared on the other. As a rule, one-inch squares will be found very convenient. The component lines of the checker board thus formed are numbered for the purpose of more easily locating the individual squares. The area thus painted should include one-half the circumference of the part. If the entire circumference is laid out in squares, the lines of one-half the circumference should be solid and those of the other half dotted. The silver solution is allowed to turn black and the skin thus stained. The lines are then painted over with white lead paint and this is allowed to dry.

Two roentgenograms are now taken, one, anteroposteriorly and one, laterally, to show the shadow of the foreign body with relation to the squares painted on the skin. By projecting imaginary lines from the shadow of the body in the two positions with relation to the outlying lines, its approximate depth from the surface is easily calculated. If the entire circumference of the part has been painted, the position of the body is noted accurately by projecting the point of intersection of the shadow with the solid line on one surface to its point of intersection with the dotted line on the opposite surface. If desired, a tracing of the lines and the shadow of the body may be made on a transparent paper and this tracing laid on the skin so that the lines of the squares correspond accurately. The shadow of the foreign body may then be marked on the skin with silver nitrate to be used as a guide at operation. Following the roentgenoscopy the white lead is removed and the part placed at rest until operation.

6. **Pneumococcic Arthritis.**—Bulkley cites one personal case and analyzes 172 cases collected from the literature.

7. **Prevention of Peritoneal Adhesions.**—Seventeen different substances and combinations were used by Pope experimentally to determine their value in the prevention of postoperative abdominal adhesions. It was apparent from the first that citrate of soda—2 per cent.—with hypertonic salt solution—3 per cent.—was the best medium used. It was found that hypertonic solutions remained longer in the abdomen than normal solutions. A hypertonic solution colored with methylene blue gave traces of its presence after forty-eight hours, while normal solutions disappeared in half this time. Two experiments were tried in which citrate solutions were employed after voluntarily severing many small vessels of the intestinal subserosa. No evidence of hemorrhage was found at autopsy one week later. In peritoneal postoperative inflammation, the height of the storm is past in forty-eight hours. The solution is present when most needed. When the insulted, traumatized endothelium is pouring out plastic exudate, with a large content of fibrin ferment, it is met by the inhibitory action of citrate of soda.

To test the toxicity of citrates and oxalates five grains each in one-half ounce of salt solution were injected intravenously in two rabbits. It had no apparent effect on these animals. It is not assumed by Pope that citrate solutions will prevent adhesions where large denuded areas of the peritoneum are exposed. These, he says, should be treated by omental grafts or mesenteric plication. It is not suggested that large quantities of solution be left in the abdominal cavity, although in the absence of pus it probably is not detrimental to do so, but that the usual operating-room solutions of normal salt have added to them a 1 or 2 per cent. of citrate of soda.

Arkansas Medical Society Journal, Little Rock

January, X, No. 8, pp. 193-217

10 Morbidity Reports: Their Importance to Local Health Officer and His Work. J. W. Trask, Washington, D. C.
11 Farmer's View of Sanitation. A. D. McNair, Little Rock.
12 Why Schoolchildren Should Be Vaccinated. O. L. Williamson, Marianna.
13 Flies as Carriers of Lamblia Spores—Contamination of Food with Human Excreta. C. W. Stiles and W. S. Keister, Washington, D. C.

Boston Medical and Surgical Journal

January 29, CLXX, No. 5, pp. 149-184

14 *Recurrences of Ulcer of Duodenum Following Operation. W. J. Mayo, Rochester, Minn.
15 Progress in Diagnosis and Treatment of Syphilis. J. H. Cunningham, Boston.
16 Case for Radium Therapy. S. Delano, Boston.
17 Cancer. S. W. Little, Rochester, N. Y.

14. **Duodenum Ulcer Following Operation.**—In an investigation of the results following operation by Mayo on 600 cases of ulcer of the stomach and duodenum in which the history subsequent to the operation was ascertained, Graham found that 81 per cent. were so relieved as to be considered cured and 10 per cent. were markedly benefited, that is, 91 per cent. were cured or improved, and 5 per cent. of the remainder were moderately improved. The results in the gastric group were not as good as in the duodenal by 3 or 4 per cent. In a small number of the cases there was a recurrence of the symptoms following relief of some weeks or months; a small number of such have been reoperated on by the Mayos. Also a small number in which the primary operation had been done elsewhere were reoperated.

Gastrojejunostomy was the method of choice in the larger number of cases of duodenal ulcers subjected to operation. If actual obstruction existed to the third and fourth degrees, gastrojejunostomy, when properly performed, gave almost certain relief. The greater the obstruction within the limits the better the results of gastrojejunostomy and the converse holds equally true that those cases with slight obstruction or without obstruction furnish the highest number of failures to cure.

Failure to cure and recurrences following operation are divided into two general groups: First, failure of the operation to relieve the stomach of its acid, irritating secretions and inadequate protection of the ulcer itself during the healing period. Second, recurrence of the ulcer following gastrojejunostomy was apparent rather than real, and had its origin

in improper suturing in the gastrojejunostomy. This happened in some cases which were most favorable for gastrojejunostomy, even when obstruction to the third or fourth degree existed at the time of the primary operation. Secondary operation showed that there was no recurrence of the original ulcer, but that a new ulcer had formed at the site where the gastrojejunostomy was made, due to heavy silk or linen sutures hanging in the suture line.

Delaware State Medical Journal, Wilmington

December, V, No. 1, pp. 1-26

18 Bacterins and Phylacogens. W. H. Kraemer, Wilmington.

Indiana State Medical Association Journal, Fort Wayne

January, VII, No. 1, pp. 1-46

19 Progress in Medicine in 1913. C. G. Beall, Ft. Wayne.
20 Surgery and Surgical Literature of 1913. J. H. Oliver, Indianapolis.
21 Progress in Pathology and Bacteriology in 1913. B. M. Edlavitch, Ft. Wayne.
22 Important Contributions to Abdominal Surgery and Gynecology during 1913. T. B. Eastman, Indianapolis.
23 Progress of Ophthalmology in 1913. G. F. Keiper, Lafayette.
24 Interesting Papers in Otolaryngology for 1913. E. D. Wales, Indianapolis.
25 Review of Pediatric Literature of 1913. O. N. Torian, Indianapolis.

Journal of Infectious Diseases, Chicago

January, XIV, No. 1, pp. 1-215

26 *Transmutations within Streptococcus-Pneumococcus Group. E. C. Rosenow, Chicago.
27 Rabies-Hydrophobia. J. G. Cumming, Ann Arbor, Mich.
28 Tumors of Ground Squirrels (Citellus Beecheyi). G. W. McCoy, Washington, D. C.
29 *Antibody Formation in Typhoid. V. H. Moon, Chicago.
30 *Etiology of Acute Rheumatism, Articular and Muscular. E. C. Rosenow, Chicago.
31 Indol Production by Bacteria of Colon-Typhoid Group. I. J. Kligler, New York.
32 *Studies on Cultivation of Virus of Vaccinia. E. Steinhardt and R. A. Lambert, New York.
33 Sanitary Significance of Body Cells in Milk. R. S. Breed, New York.
34 Preparation of Dried Cultures. L. A. Rogers, Washington, D. C.
35 *Septic Sore Throat Epidemic in Cortland and Homer, N. Y. C. E. North, B. White and O. T. Avery, New York.
36 Actinomyces-Like Granules in Tonsils. D. J. Davis, Chicago.
37 Comparative Tests of Sputum by Kinyoun and Ellman-Erlandsen Methods. J. L. Berry and M. A. Smeaton, New York.
38 *Tubercle Bacilli in Blood. J. L. Berry, New York.
39 *Case of Multiple Arthritis Due to Friedländer Bacillus. G. F. Dick, Chicago.
40 Spontaneous Typhoid-Like Epidemic Among White Rats. A. M. Pappenheimer and H. von Wedel, New York.

26. **Streptococcus-Pneumococcus Transmutations.**—Altogether twenty-one strains isolated originally as hemolytic streptococci from a wide range of sources, including erysipelas, scarlet fever, puerperal sepsis, arthritis, tonsillitis, cow's milk, etc., have in one way or another been converted into *S. viridans* by Rosenow; 3 into *S. viridans* and into typical pneumococci, and 1 into *S. mucosus* as well; 1 of these corresponding at one time to the streptococci from rheumatism. Seventeen strains which were isolated as *S. viridans* chiefly from the blood and tonsils in cases of chronic infectious endocarditis and 2 strains from cow's milk have been converted into pneumococci, and 2 of these into *S. mucosus* also; 10 have been made to take on cultural and morphologic characteristics of hemolytic streptococci, in 2 of which the pathogenic powers were shown to be those of hemolytic streptococci; 1 strain was converted into hemolytic streptococcus, into *S. viridans*, and into a pneumococcus.

Eleven strains isolated as pneumococci from the sputum, blood and lung in pneumonia, and from empyema and Cole's strains I and II have been made to correspond to hemolytic streptococci; 7 took on the features of *S. viridans;* the streptococci from 3 of these strains by animal passage acquired all the essential features of the streptococci of rheumatism; 2 have been converted into hemolytic streptococcus, the streptococci of rheumatism, *S. viridans*, and back again into pneumococcus. Five strains of *S. mucosus* have taken on the cultural features of hemolytic streptococci. Two of these were converted in to *S. viridans*. Five strains of the streptococcus of rheumatism have taken on the features of hemolytic streptococci, 2 of *S. viridans* and 4 have been converted into pneumococci. The transformation of some of the strains has been found to be complete by every test known. The details of this work are described fully.

29. **Antibody Formation in Typhoid.**—Moon concludes that the protective effect of antityphoid inoculation lasts for a longer period than two years, and that this effect is due not so much to the persistence of antibodies in the blood as to the promptness with which new antibodies are formed in the presence of typhoid proteins.

30. **Etiology of Acute Rheumatism.**—Three types of cocci have been obtained by Rosenow from the joints in rheumatism. The strains from five cases, in none of which were muscles involved, produced green on blood agar, formed long chains of diplococci and large clumps in broth; when injected into animals they produced a non-destructive arthritis, pericarditis and endocarditis. The diplococci were distinctly larger and more uniform in size than those of the *S. viridans*. In six cases, all of which showed more or less muscular involvement in conjunction with arthritis, the organisms isolated produced a slight but hazy hemolysis on blood-agar plates, formed short chains and diplococci in broth, and when injected intravenously in rabbits commonly produced arthritis, endocarditis, some pericarditis, a myositis, and often a most pronounced myocarditis. They are the same size as hemolytic streptococci, but the diplococcus arrangement in the chains is more marked.

In three cases, none of which showed symptoms referable to the muscles, the organisms produced small, grayish colonies on blood-agar plates without perceptibly affecting the medium. They formed clumps of small micrococci and occasionally diplococci and short chains. One of these strains produced arthritis, endocarditis and pericarditis, but no muscle lesions.

Rosenow is convinced that these results would seem to explain why different observers have named organisms like these "streptococcus," "diplococcus" or "micrococcus rheumaticus," depending on the particular type with which they happen to be working. The virulence of all three types is of a low order. The third group seems to be the least virulent, the first group occupying a middle position, those from cases of muscular and articular rheumatism being the most virulent.

The muscle lesions have been produced in numerous rabbits, dogs and one monkey. The character of the lesions was similar in all. The affinity for joints, endocardium, and often also myocardium and muscles which characterizes these organisms when first isolated, tends to disappear on cultivation. It may be restored by animal passage, and other strains of streptococci under certain conditions may be made to acquire the features of the strains from rheumatism.

Experimental evidence has been produced to show that probable lodgment of organisms in the fine capillaries of the iris occurs in rheumatic iritis. The lesions in the appendix, the diarrhea due to colitis, and the enlargement of the mesenteric lymph-nodes observed commonly in animals after intravenous injections of these strains, as well as their isolation from the stool during rheumatism in man, indicate that the organisms may gain entrance through the lymph structures of the intestinal tract. The strains from muscular rheumatism, especially after one or two animal passages, as well as other streptococci when they have attained a similar grade of virulence, show a marked affinity for the mucous membrane of the stomach, the pelvic mucous membrane and medullary portion of the kidney and the gall-bladder. Ulcer of the stomach, the picture of an "ascending" nephritis, cholecystitis with beginning formation of gall-stones, caused by streptococci, have been found repeatedly in rabbits and dogs injected with these strains, especially after one or more animal passages.

32. **Cultivation of Virus of Vaccinia.**—Steinhardt and Lambert found that the virus of vaccinia incubated in tissue cultures composed of plasma and cornea from normal rabbits and guinea-pigs shows a definite increase, but the degree of multiplication is not comparable to that observed in cultures of rapidly growing bacteria. There is no growth of the virus in preparations containing cornea killed by freezing or by hypotonic salt solution. There is no evidence of the growth of the virus in preparations in which pieces of heart, liver or kidney have been substituted for cornea. The virus is

soon rendered inactive in preparations containing plasma and cornea obtained from an immune animal. The method of tissue cultivation is well adapted for the demonstration of immunity reactions *in vitro*.

35. **Septic Sore Throat Epidemic.**—In the two epidemics of septic sore throat which occurred simultaneously in May, 1913, in Cortland and Homer, N. Y., the two communities being three miles apart, the authors found that over 70 per cent. of the cases in each community occurred among the patrons of a dairyman, who was the only dairyman selling milk in both places, and who supplied less than 7 per cent. of the total milk-supply. Adjacent towns had no cases and, further, they received no milk from the suspected dairy. Physical examination of the cows and microscopic examination of milk sediments showed the existence of acute udder inflammation in two cows in the herd of the suspected dairyman.

Bacteriologic examination showed that cultures from the throats of four patients contained streptococci apparently identical with strains of streptococci obtained from the milk slime from the two cows suffering from garget. Cultures from the throats of eight other patients contained streptococci of this same type, but differing, by slight variations only, in their carbohydrate fermentations. The streptococci isolated from the milk slime from the two garget cows and the throats of four patients in the present epidemic correspond in all respects to strains of streptococci isolated previously from three cows of another herd known to be suffering from garget, and from the milk slime from one cow supposed to be normal, but which gave an abnormal amount of slime.

38. **Tubercle Bacilli in Blood.**—The entirely negative results obtained by Berry by the microscopic examination of fifty-one specimens of blood taken from patients in advanced stages of tuberculosis are in agreement with the experience of a large number of observers. Since organisms morphologically identified with tubercle bacilli are present occasionally in water and elsewhere it is fair to assume that some, at least, of the acid-fast bacilli observed in blood by different investigators were not tubercle bacilli, and where there are no confirmatory animal tests the proportion of specimens containing true tubercle bacilli must remain an open question.

39. **Arthritis Due to Friedländer Bacillus.**—On account of a history of chronic tonsillitis in Dick's case cultures were made from the tonsils. Colonies of *B. mucosus* (Friedländer bacillus) outnumbered all the other colonies on repeated examinations. Several varieties of streptococci were isolated and tested on rabbits in varying doses without producing joint lesions. When injected intravenously the Friedländer bacillus, on the other hand, produced joint lesions in rabbits and dogs in every instance. The organism was very toxic for rabbits. In six rabbits receiving from 1/10 to 1/5 of twenty-four cultures death occurred in from twenty-four to seventy-two hours, and in every case the bacilli were found in smear and cultures from the slight exudate in the joints of the animals, purulent pericarditis was found with bacilli present in the pus.

Kentucky Medical Journal, Bowling Green

January 1, XII, No. 1, pp. 1-56

41 Insects as Transmitters of Disease. J. H. Hendren, Cary.
42 Hypertrophied Tonsils. E. Wilson, Pineville.
43 Differential Diagnosis of Diseases of Eye and Ear Most Commonly Met with by General Practitioner. J. P. Edmonds, Middlesboro.
44 Cesarean Section. E. M. Harrison, Fork Ridge, Tenn.
45 Typhoid and Its Practical Management. T. T. Gibson, Middlesboro.
46 Ductless Glands and Their Relation to Disease. O. P. Nuckols, Pineville.
47 Complications of Typhoid. B. E. Giannini, Straight Creek.
48 Appendicitis; Operable and Non-Operable. T. Ramsey, Pineville.
49 Normal Labor and Its Management. J. G. Foley, Pineville.
50 Malpositions and Diseases of Female Pelvic Organs. C. K. Brashear, Middlesboro.
51 Bacterial Diseases and Their Prevention. J. Schultz, Logmont.
52 End Results of Uncinariasis Dispensaries. O. P. Nuckols, Pineville.
53 Gunshot Wounds of Abdomen. L. L. Robertson, Middlesboro.
54 Examination of Blood in Diagnosis and Prognosis. M. Combs, Pineville.
55 Fracture Suggestions. G. P. Grigsby, Louisville.
56 Uncinariasis. J. S. Fitzhugh, Island.
57 Diagnosis ad Treatment of Knee Lesions in Adult. V. P. Gibney, New York.

January 15, XII, No. 2, pp. 57-92

58 Sex Hygiene Symposium: Various Aspects of Social Evil. H. A. Davidson, Louisville.
59 Idem: Is There a Venereal Menace? H. J. Farbach, Louisville.
60 Idem: Heredity and Its Social Bearings. J. D. Trawick, Louisville.
61 Idem: Medical Ethics and Social Hygiene. J. M. Mathews, Louisville.
62 Cervical Lacerations and Their Relations to Nervous Manifestations. C. C. English, Louisville.

Lancet-Clinic, Cincinnati

January 17, CXI, No. 3, pp. 55-80

63 Deformities of Nasal Septum and Operation for Its Submucous Resection, with Original Incision. H. V. Dutrow, Ancon, C. Z.
64 Medical Ethics and Social Hygiene. H. Cabot, Boston.
65 Some Aspects of Social Hygiene Movement. R. S. Yarros, Chicago.
66 "Non-Mental." Condition of Dementia Praecox as Shown by Abderhalden Reaction and Halvar Lundvall's Remedy. B. Holmes, Chicago.

January 24, CXI, No. 4, pp. 81-128

67 Multiple Hyaloserositis. P. G. Woolley, Cincinnati.
68 *Experimental Production of Gastric Ulcers by Intravenous Injection of Clumped Colon Bacilli. E. C. Steinharter, Cincinnati.
69 Use of Electro-Magnets in Extraction of Metallic Bodies from Trachea and Bronchi, with Report of Cases. S. Iglauer, Cincinnati.

68. **Production of Gastric Ulcers.**—Steinharter investigated the possibility of producing ulcers by injecting clumped colon bacilli intravenously. An active strain of the organism in broth was agglutinated with weak solutions of acetic and hydrochloric acids. When 2 to 4 c.c. of such an emulsion was injected into the ear vein of rabbits the injection was almost uniformly followed by the formation of hemorrhagic gastric erosions or ulcers. The method employed was as follows: The agglutinating reagent, found to clump the strain of colon bacillus employed, was approximately a one-twelfth-normal hydrochloric acid solution. Twenty-four-hour-old broth cultures of the colon bacillus treated with this reagent in the proportion of 2½ c.c. of the broth culture to 1 c.c. of the reagent were incubated for twenty-four hours, and then centrifuged. The sediment was washed twice with normal salt solution and then shaken up with 10 c.c. of fresh saline. The turbid emulsion thus formed was injected intravenously into rabbits.

Medical Record, New York

January 31, LXXXV, No. 5, pp. 185-230

70 Occupational Diseases. W. G. Thompson, New York.
71 Beriberi. V. G. Heiser, Manila.
72 Relation of Experimental Syphilis to Eugenics. H. J. Nichols, U. S. Army.
73 Cases of Amebic Dysentery Treated with Emetine. J. Wagner, New York.
74 Meaning of Dreams. M. Solomon, Chicago.
75 Heely Puzzle Picture and Defective Aliens. M. K. Gwyn, New York.
76 Vegetable Hormone in Cases of Ileus and Gastric Dilatation. D. H. Stewart, New York.
77 Treatment of Deafness with Sonorous Vibrations by Zund-Burguet Method. L. M. Hubby, New York.
78 Clinical Observations of Auscultation at Acromion Process. N. Greenwald, New York.

New Mexico Medical Journal, Las Cruces

January, XI, No. 4, pp. 113-141

79 Treatment of Cholecystitis. J. F. Lilly, Albuquerque.
80 Physician's Duty to Himself. J. H. Wroth, Albuquerque.
81 Otitic Abscesses of Brain. W. T. Salmon, Albuquerque.
82 Pericarditis. J. R. Gilbert, El Paso, Tex.

New York Medical Journal

January 31, XCIX, No. 5, pp. 205-252

83 Neurology at Seventeenth International Congress of Medicine. C. K. Mills, Philadelphia.
84 *Oil-Ether Anesthesia. J. T. Gwathmey, New York.
85 *Large Gall-Stone Passed Per Viam Naturalem. H. J. Novack, Philadelphia.
86 Mental Defectives. H. A. Knox, Ellis Island, N. Y.
87 Foreign Bodies in Appendix. J. W. Kennedy, Philadelphia.
88 Modern Treatment of Chronic Nephritis. R. Hills, New York.
89 Dermatoses Neuroticae. W. P. Cunningham, New York.
90 Testing Urine for Bile Pigments and for Diacetic Acid. J. Rosenbloom, Pittsburgh.

84. Abstracted in THE JOURNAL, Dec. 20, 1913, p. 2274.

85. **Gall-Stone Passed Per Viam Naturalem.**—For ten or eleven years Novack's patient was troubled with constipation and occasional cramps of moderate severity. During the past

year she had five or six attacks of cramps, but none severe enough to confine her to bed. Finally the cramps became rather severe and she was in bed all day previous to the time when the stone passed. She had a constant desire to go to stool and her bowels would move slightly. Early the following morning, while at stool, she heard something very solid drop from her bowels and it proved to be a large stone. The stone was 2.625 inches in length, 3.5 inches in circumference, and weighed 324 grains. The center was composed almost entirely of pure crystalline cholesterin, while the several outer layers were of cholesterin and bilirubin calcium.

Northwest Medicine, Seattle

January, VI, No. 1, pp. 1-30

91 *Plea for Early Operation for Cancer of Lower Lip. E. H. Beckman, Rochester, Minn.
92 Some Practical Points in Diagnosis of Active Tuberculosis. F. M. Pottenger, Monrovia, Cal.
93 *Treatment of Pulmonary Tuberculosis by Artificial Pneumothorax. R. C. Matson, Portland, Ore.
94 Tuberculous Peritonitis. A. C. Behle, Salt Lake City, Utah.
95 Gynecologic Tuberculosis. E. M. Welty, Spokane, Wash.
96 Emergency Incubator. F. Chappell, Granite Falls, Wash.

91. Abstracted in THE JOURNAL, Oct. 25, 1913, p. 1574.

93. **Tuberculosis and Artificial Pneumothorax.** — Sixteen patients have been under treatment by Matson by means of artificial pneumothorax. Seventy-five inflations have been done. He has experienced one gas embolism and one effusion. One hopeless case terminated fatally before a pneumothorax could be induced. In one case no pleural space could be found. Patient's condition the same. In 3 patients the treatment was discontinued on account of inability to establish a complete pneumothorax, but all enjoyed improvement. Of the remaining 4 under treatment, 2 are uncertain and 2 are improving. Of 7 patients in whom a complete pneumothorax could be induced, 3 are apparently well and 5 are making good recoveries.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

January, XVIII, No. 1, pp. 1-61

97 *Clinical Aspect and Medical Management of Arthritis Deformans. F. Billings, Chicago.
98 Plea for Frankness in Dealing with Patients. J. M. Northington, Boardman, N. C.
99 What Virginia Is Doing in Fight Against Tuberculosis. B. L. Taliaferro, Richmond, Va.
100 Case of Scarlet Fever in Child Two Weeks Old. M. P. Rucker, Richmond, Va.

97. Abstracted in THE JOURNAL, Nov. 29, 1913, p. 2008.

Psychoanalytic Review, Lancaster, Pa.

November, I, No. 1, pp. 1-120

101 Theory of Psychoanalysis. C. G. Jung.
102 Psychoanalytic Study and Treatment of Case of Self-Mutilation. L. E. Emerson, Boston.
103 Blindness as a Wish. T. H. Ames, New York.
104 Technic of Psychoanalysis. S. E. Jelliffe, New York.

Quarterly of Federation of State Medical Boards of United States, Easton, Pa.

January, I, No. 2, pp. 100-163

105 Study of Medicine Fifty Years Ago and To-Day. A. Vander Veer, New York.
106 Hospitals as Educational Institutions. T. Howell, New York.
107 Enforcement of Adequate Premedical Requirements and Hospital Year by State Boards for Medical Registration. C. Frothingham, Boston.
108 Preliminary Training for Entrance into Medical Schools. K. C. Babcock, Champaign, Ill.
109 Function of Examining Boards. A. Flexner.

Surgery, Gynecology and Obstetrics, Chicago

January, XVIII, No. 1, pp. 1-144

110 Treatment of Diffuse Dilatation of Esophagus by Operation. A. V. S. Lambert, New York.
111 *Relationship Between Urinary System and Diseases of Female Pelvic Organs. J. G. Clark and F. E. Keene, Philadelphia.
112 *Diagnosis and Treatment of Border-Line Pathologic Lesions. J. C. Bloodgood, Baltimore.
113 *Postoperative Results of Trachelorrhaphy in Comparison with Those of Amputation of Cervix. V. N. Leonard, Baltimore.
114 Syphilis of Bones and Joints. S. W. Boorstein, New York.
115 Inguinal Route Operation (Moschcowitz) for Femoral Hernia; with Supplementary Note on Cooper's Ligament. M. G. Seelig and L. Tuholske, St. Louis.
116 *Congenital Dislocation of Hip; Rational Method of Treatment. H. M. Sherman, San Francisco.
117 *Tumors of Large Nerves Associated with Fibroma Molluscum, with Exhibition of Largest Specimen on Record. N. Kerr, Chicago.
118 Cysts of Omentum. V. A. Funk, Vincennes, Ind.
119 Pneumatic Rupture of Intestine. P. A. Bendixen and J. D. Blything, Davenport, Ia.
120 *Artificial Ureter Made from Abdominal Wall. A. A. Strauss, Chicago.
121 Relation of Multiple Adenomas to Etiology of Enlargement of Prostate. J. A. Gardner and B. T. Simpson, Buffalo.
122 *Treatment of Recurrences and Metastases from Carcinoma of Breast. G. E. Pfahler, Philadelphia.
123 Hemostasis in Cranial Surgery. L. H. Landon, Philadelphia.
124 Fracture of Lower Ends of Tibia and Fibula. A. R. Colvin, St. Paul, Minn.
125 *Improved Method of Hemostasis in Shoulder- and Hip-Joint Amputations. W. A. Norton, Savannah, Ga.
126 *New Diagnostic Sign in Injuries of Abdominal Viscera. E. B. Claybrook, Cumberland, Md.
127 Habitual or Recurrent Dislocation of Shoulder. T. T. Thomas, Philadelphia.
128 Surgical Treatment of Bacillus Coli Communis Infection Complicating Pregnancy. E. P. Davis, Philadelphia.
129 Recognition of Ureter. W. Babcock, Philadelphia.
130 Method of Marking Important Fields on Microscopic Slide. H. H. Hart, Baltimore.

111. **Urinary System and Female Pelvic Organs.**—Realizing that lesions of the urinary system may occur either as complications or sequelae of disease of the female organs, the authors urge strongly the importance of determining their exact nature before resorting to an operation, which otherwise may be inadequate or even unnecessary. Experience in a large number of these cases has taught them that the solution of this problem cannot be gained from dependence on symptoms; they can only serve as an indicator which points to the necessity of further investigations. Whether it is primary disease of the kidney or abnormalities of the pelvic organs which encroach on the bladder, the subjective manifestations common to both are often limited to vesical symptoms. The relationship of the one to the other can be determined definitely only by a thorough examination of the bladder, ureter and kidneys. A routine cystoscopic examination in all cases presenting vesical disturbances, irrespective of the coincident pelvic pathology, should be the rule, for only by following this precaution can grave errors in diagnosis be avoided.

112. Abstracted in THE JOURNAL, June 28, p. 2065.

113. **Postoperative Results of Trachelorrhaphy.**—The presence of a marked endocervicitis is considered by Leonard as a contra-indication to the performance of trachelorrhaphy. He says that although serious postoperative hemorrhage is not infrequent after amputation of the cervix (5 per cent.), this accident is very uncommon after trachelorrhaphy. The influence of trachelorrhaphy in improving the general condition of the patient is, in properly selected cases, quite as marked as that of amputation of the cervix. In each instance about 90 per cent. of the patients report improvement in the general health. Although trachelorrhaphy may render a mild endocervicitis more amenable to treatment, it cannot be considered, like amputation of the cervix, as a curative measure for this condition. Laceration of the cervix is a frequent cause of dysmenorrhea in multiparae, and its removal by either amputation of the cervix or trachelorrhaphy is followed by the disappearance or amelioration of menstrual pain in over 60 per cent. of cases. Fertility is much more likely to follow trachelorrhaphy than amputation of the cervix.

After amputation of the cervix, the incidence of abortion and premature delivery is greatly increased, while trachelorrhaphy has no effect on the course of subsequent pregnancy. Labor after amputation of the cervix is usually difficult, while after trachelorrhaphy it is almost always normal. Amputation of the cervix is an operation to be avoided in women in the child-bearing period until all other therapeutic means have been exhausted. Trachelorrhaphy has a therapeutic efficiency, in properly selected cases, quite as high as amputation of the cervix, and, having no influence on the subsequent marital history of the patient, is the operation of choice for women in the child-bearing period.

116. Abstracted in THE JOURNAL, June 21, p. 2024.

117. **Tumors of Nerves and Fibroma Molluscum.**—The tumor in this case involved the sciatic nerve and measured 6 inches in length by 3 in diameter and weighed 1 pound and 3 ounces.

120. **Artificial Ureter Made from Abdominal Wall.**—The following surgical procedure was carried out experimentally by Strauss: An incision was carried from ½ inch below the angle of the twelfth rib in the midaxillary line downward to within 1 inch medianward of the anterior superior spine of the ilium. The muscles were divided down to the transversalis. The internal oblique was divided and dissected back as far as its iliolumbar fascial attachment laterally and medianward to the belly of the rectus muscle. A tongue-shaped flap was now made, which included the transversalis muscle, fascia and peritoneum. The peritoneum, fascia and muscle were closed with one suture starting at the superior angle of the pedicle of the flap, and while suturing the pedicle the sutures only penetrated the peritoneum and transversalis fascia. The operation is now absolutely extraperitoneal.

The ureter was exposed in the region of the flap and the ureteral arteries were tied with fine silk at both the distal and the proximal ends. Two or three inches of the ureter were next resected. A temporary ligature was placed on the proximal end of the ureter. The lower free edge of the flap was picked up and the peritoneum and transversalis fascia separated from the transversalis muscle for about 0.5 cm. An end-to-end anastomosis with the distal end of the ureter was made in such a way that the fascia and peritoneum were slightly within the ureter and the muscle without. The proximal end of the ureter was placed on the upper portion of the flap and an end-to-end anastomosis made by a continuous circular suture. Here, however, the peritoneum is not within the lumen of the ureter. The edges of the flap were closed to complete the tube, using a continuous over-and-over suture going upward and crossing this with a suture downward, so as to make a figure X. Fine arterial silk was used for the anastomosis and flap closure. The temporary ligature was removed and the artificial ureter, as well as the ureter below the anastomosis, became distended with urine and the rhythmic ureteral wave passed on over the ureter. A fine rubber drain was left in the wound for the first few days to allow for the slight leakage of urine that might occur.

At the end of seven months one of the dogs was anesthetized and opened. The pedicle of the flap was normally intact. The artificial ureter was shortened to about one-third its original length so as to draw the ureteral ends nearer together. The circumference and lumen of the tube were of the same size as when first constructed. The tube as a whole felt hard and non-compressible. The peritoneum was adherent to it on one side and to the internal oblique on the other. Many well-defined blood-vessels could be seen adjacent and in the adherent tissues. The ureter was now divided 3 inches below the distal anastomosis and urine came through in jets in about normal quantity. The specimen was removed and an opening made in the ureter about 1 inch above the proximal anastomosis. A probe could be passed with ease through the artificial ureter and its anastomoses and also a second smaller probe could be passed alongside of it. The hardened artificial ureter was opened with scissors. It cut with difficulty. Its inner surface appeared smooth and had the appearance of a lining membrane. The body of the tube felt hard. This, Strauss assumed to be due to infiltration of calcium and urinary salts. The anastomoses showed no evidence of contraction or stenosis. The kidney showed no changes.

122. **Recurrences and Metastases from Cancer of Breast.**—Fifteen cases are cited by Pfahler to show that the application of the Roentgen rays will at times cause a disappearance of both small and extensive areas of both recurrent and metastatic carcinoma; that the disease can at times be made to disappear when it covers the greater portion of the chest. In at least one case there seemed to be produced some constitutional condition which led to the rapid disappearance of carcinomatous tissue that had not even been exposed to the rays. The additional administration of thyroid extract in small doses seems to aid materially in the cure of the disease. Pfahler advises that the disease should be treated as actively and with as large doses as circumstances will permit, using every possible means for the protection of the skin. Since the above cases prove that extensive recurrent malignant disease can be made to disappear, the best time to treat with the rays is immediately after operation, when least disease is present. This postoperative treatment should be thorough and given with the same care that would be used with palpable disease.

125. **Hemostasis in Shoulder- and Hip-Joint Amputations.**—A 4-inch roller bandage and an Esmarch rubber tourniquet is all that is needed by Norton for hemostasis. The 4-inch bandage is made into a three- or four-ply strip 2 yards long and laid on the chest, extending over the shoulder; another similar strip is held over the scapula, the Esmarch tourniquet is applied over these two strips and pinned to each one with safety-pins. The strips are simply folded back and handed to the nurse, or can be tied under the opposite arm. For hip-joint amputation an anterior strip of bandage is placed so that the outer border of the bandage touches the anterior superior spine of ilium, and the posterior one is placed so that the inner border of the bandage touches the tuberosity of ischium. Pull is exerted so as to keep the Esmarch snug in the crotch and in the groove below the anterior superior spine of the ilium. The bandage pulleys are now passed over the shoulder of the other side and handed to the nurse, or, better still, tied securely.

126. **Injuries of Abdominal Viscera.**—The sign to which Claybrook first called attention in 1904 consists in the transmission of the heart and respiratory sounds, so that they can be heard all over the abdomen almost as well as over the chest. The ear is all that is needed to elicit the symptom. In the past nine years he looked for this sign, in all cases coming under his care, in which there was the slightest chance of an internal injury. After following these cases up closely, he has come to the conclusion that the sign is, when present, a positive indication for immediate laparotomy, whether the other signs present indicate grave trouble or not. It is present soon after the reception of the injury, and has been noted as early as a half hour after the reception of the injury. It continues in unoperated cases as long as twenty-four hours after injury and may last for days. Claybrook believes that it is due to the irritation of the parietal peritoneum by the sudden outpouring of foreign material, as bowel content, blood and urine, into the abdominal cavity. It is never present in cases of extraperitoneal rupture of the bladder, or in injuries of the abdominal wall, without internal injury. He did not find it present in a case of rupture of the liver, in which the rupture was small, and down in the lobus Spigelii with the blood confined by liver, stomach and omentum so that the parietal peritoneum was not flooded. In one case of severe bowel injury he failed to find it although the abdomen was full of blood.

Claybrook is positive that abdominal rigidity has no bearing on the production of the sign, as he has found it in perfectly soft, flaccid abdomens, as well as in those that were rigid. The fluid itself could not be responsible, for it is too little in amount in many cases, and besides fluids do not carry these sounds as well as gas, or the tissues. He has found the sign present in cases of ruptured meseatery with hemorrhage, ruptured spleen, ruptured bowel, ruptured liver, ruptured tubal pregnancy, and immediately after rupture of an appendix. It is not present in postoperative cases. The sign is not found in a slowly developing effusion, as in peritonitis or ascites.

Tennessee State Medical Association Journal, Nashville

January, VI, No. 9, pp. 341-372

131 *Brown's Modification of Hodgen's Splint. J. F. Gallagher and W. M. McCabe, Nashville.
132 Fractures of Elbow. S. R. Duggan, Eagleville.
133 General Practitioner as Specialist. H. Lockhart, Coalmont.
134 Nasal Polypi. I. A. McSwain, Paris.
135 Plea for Intubation. J. M. Clack, Rockwood.

131. Abstracted in The Journal, April 19, p. 1248.

Vermont Medical Monthly, Burlington

January, XX, No. 1, pp. 1-26

136 Progress and Problems in Preventive Medicine. M. J. Rosenau, Boston.

Washington Medical Annals

January, XIII, No. 1, pp. 1-82

137 Dawn of a New Era in Surgery. W. P. Carr, Washington, D. C.
138 Roentgenoscopy in Incipient and More Advanced Stages of Pulmonary Tuberculosis. C. A. Pfender, Washington, D. C.
139 Abscess of Liver; Nineteen Cases. W. D. Webb, Washington, D. C.
140 Whole Milk Dilutions in Feeding Normal Infants. J. A. Gannon, Washington, D. C.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

January, XI, No. 121, pp. 1-48

1 Some Aspects of Small-Pox in Infants and Children. W. Hanna.
2 Nervous Complications of Varicella. R. Miller and J. A. Davidson.
3 Psoriasis in Infancy. H. Davis.

British Medical Journal, London

January 17, I, No. 2768, pp. 125-176

4 *Infection of Children with Bovine Tubercle Bacillus. A. P. Mitchell.
5 *Torn Semilunar Cartilages. W. Robinson.
6 Possible Fallacy in Diagnosis of Internal Derangements of Knee-Joint. S. Mort.
7 *Treatment of Fractures about Elbow-Joint and Knee-Joint. B. Hughes.
8 Use of Ionic Medication in Treatment of Certain Venereal Diseases. R. Connell.
9 Rapid Delivery in Eclampsia. R. Jardine.

4. Infection of Children with Bovine Tubercle Bacillus.—Mitchell investigated seventy-two consecutive unselected cases of tuberculous cervical lymph-nodes in children; of these, thirty-eight resided in Edinburgh and thirty-four came from neighboring country districts (within a radius of 30 miles). Experimental animals were used in every case. Guinea-pigs were inoculated with tuberculous material as soon as possible after receiving it, and the lesions subsequently developing were the immediate source of the cultures. It was found that the spleen and softened caseous lumbar lymph-nodes were the structures that yielded the best growing cultures.

It soon became evident to Mitchell that he had to deal with two distinct groups of tubercle bacilli, one of which far exceeded the other in virulence for the rabbit. The groups he has designated engonic (luxuriant) and dysgonic (sparse). The dysgonic (sparse) group is a very large one and contains sixty-five viruses. All the cultures of this group grow very sparsely or not at all on glycerin egg and are assuredly of the bovine type. The engonic (luxuriant) group grows luxuriantly on glycerin egg in primary cultures and succeeding generations and includes all the cultures of the human type. It is a very small group and contains only seven out of the seventy-two viruses investigated. This division into engonic and dysgonic viruses has corresponded in all cases with the difference in virulence in rabbits.

By his study Mitchell is convinced that cow's milk containing bovine tubercle bacilli is clearly the cause of 90 per cent. of the cases of tuberculous cervical lymph-nodes in infants and children residing in Edinburgh and district, and is responsible for by far the larger proportion of tuberculous cervical lymph-nodes in children during the milk drinking period of life (0 to 5 years). Bovine tuberculosis can, therefore, no longer be considered a negligible factor in respect to the spread of tuberculosis among children, more especially since unsterilized cow's milk in this country is a vehicle by which tubercle bacilli must most frequently be introduced into the bodies of children. Until the proper legislative measures are obtained it is imperatively necessary for the public to sterilize cow's milk for the feeding of children.

Regarding the channels of infection, the faucial tonsils have in tuberculosis of the upper deep cervical lymph-nodes an importance not hitherto well enough recognized or understood—that is, they act not only as most frequent portals of entry for the tubercle bacillus, but in a large proportion of cases a well marked tuberculosis of the upper deep cervical lymph-nodes is secondary to a small tuberculous focus in the tonsil. Mitchell so investigated the hypertrophied faucial tonsils removed from ninety children, in whom the cervical lymph-nodes showed no clinical evidence of tuberculous disease; six (6.5 per cent.) of these hypertrophied tonsils gave histologic evidence of tuberculous disease, while nine (10 per cent.) yielded positive results when inoculated into guinea-pigs. The bovine bacillus was present in three cases, and the human in one case. The high percentage of faucial tonsils in which the bovine virus was present, Mitchell thinks, is further striking proof of the frequency of tuberculous cow's milk as a source of infection.

5. Torn Semilunar Cartilages.—Robinson's method of treatment is as follows: The patient is lying straight with the knee held acutely flexed, or he is in the Trendelenburg position. A tourniquet is applied. The skin is swabbed over with petrol containing ½ per cent. of iodin to remove grease, and then painted with tincture of iodin, after which the joint is wrapped round tightly with four layers of gauze wrung out of a solution containing spirit (70 per cent.) and mercury biniodid (1 in 1,000). A transverse incision is made to extend backward from the inner border of the patellar tendon for 3 inches. Sometimes it is necessary to have a good look round, to use a hook and to rotate the leg, before the lesion is discovered. The wound is closed in three layers, the two deeper always with iodized catgut. The interrupted sutures in the capsule are placed widely apart to allow of transudation of the synovia, which is poured out after the operation, to escape into the tissues outside of the joint and thus prevent the pain which arises from distention of the joint. No drain is inserted. Robinson uses either iodized catgut for the skin incision, or silkworm gut (sometimes intracutaneously), or Michel's clips. The skin is painted again with iodin, and gauze, wool and a bandage is applied. No splint is applied; no sepsis occurs and the results are said to be excellent. He reports twenty-two cases of torn internal cartilage and two of the external.

7. Treatment of Fractures of Elbow-Joint and Knee-Joint.—Treatment by full flexion (Jones' method), Hughes claims, applies to all fractures in the neighborhood of the elbow-joint, except fractures of the olecranon process, and most cases of fracture of the head of the radius. In these two latter open operation is preferable—namely, wiring the olecranon and often excision of the head of the radius. Of injuries in the neighborhood of the knee-joint, only those involving separation of the lower epiphysis of the femur and fracture of the shaft in the neighborhood of the condyles not involving the joint are considered. The displacement here is reduced under an anesthetic, and the knee is put in a condition of full flexion and held so for ten days or a fortnight and then is brought down to full extension and put up on a Liston's long splint with extension below the knee.

Glasgow Medical Journal

January, LXXXI, No. 1, pp. 1-79

10 *Tumors of Bladder: Three Cases Illustrating Points of Interest in Diagnosis and Treatment. D. Newman.
11 Chronic Valvular Disease of Heart. D. MacDonald.
12 Chloroform Anesthesia in Light of Physiologic Research. G. H. Clark.
13 Robert Burns and "Sum Practysis of Medecyne." J. W. Findlay.

10. Tumors of Bladder.—Three cases are reported by Newman: 1. Hematuria of six months' duration, blood at first small in amount, bleedings lasted only for a short time. Afterward hematuria frequent and copious. Pedunculated papilloma fixed to anterior wall; removed through suprapubic incision. No return of hematuria. 2. Hematuria of five months' duration, at first small in quantity and only at end of micturition, which act was sometimes difficult to begin, but was never painful. This was relieved after a portion of tumor came away spontaneously. Simple pedunculated papilloma at base of bladder, removed through suprapubic wound, no return of hematuria. 3. Hematuria during six months, at first small in amount, only occasional, and unaccompanied by other symptoms; later continuous, and accompanied by other symptoms; later continuous, and accompanied by frequent micturition, finally by incontinence, and severe pain.

Malignant adenopapilloma occupying almost entire bladder, infiltrating deep structures and surrounding parts. Suprapubic cystostomy for drainage. Radical operation inadvisable.

Journal of Laryngology, Rhinology and Otology, London

January, XXIX, No. 1, pp. 1-56

14 Extra Maculae in Ampullae of Birds. U. Pritchard.
15 Total Deafness, Associated with Symptom-Complex Described by Baranyi, in which Complete Restoration of Hearing Occurred. R. Baranyi.
16 Scabbard-Trachea and Pulmonary Emphysema. Kahler.
17 Use of Aids to Hearing and Prostheses in Middle-Ear Deafness. W. S. Bryant, New York.
18 Pathology of Otosclerosis. K. H. Digby.

Lancet, London

January 17, I, No. 4716, pp. 157-222

19 Progress of Life Assurance Medicine in Past Thirty Years. R. H. Fox.
20 Value of Cardiac Sign in Cancer. W. Gordon.
21 Early Diagnosis and Treatment of Ruptured Intestine. V. Z. Cope.
22 Question of "Concubitancy" in Cousin Marriages. M. Yearsley.
23 Recurrent Intussusception. G. G. Turner.
24 Case of Extra-Uterine Pregnancy in Rudimentary Fallopian Tube. D. Duff.
25 Case of Schistosomiasis Japonica. H. White.
26 Acute Leukemia Simulating Caries of Spine. H. D. Rolleston and C. H. S. Frankau.

Quarterly Journal of Medicine, London

January, VII, No. 26, pp. 93-208

27 *Intracranial Serous Effusions of Inflammatory Origin. W. B. Warrington.
28 *Experimental Formation of Acute Gastric Ulcers. T. R. Elliott.
29 *Bronzed Diabetes. J. F. Gaskell, A. F. Sladden and Others.
30 *Infective Nature of Certain Cases of Splenomegaly and Banti's Disease. A. G. Gibson.
31 Pneumopericardium. J. Cowan, A. W. Harrington and J. R. Riddell.
32 Pituitary Body. E. Goetsch.

27. **Intracranial Serous Effusions.**—Warrington summarizes his views as follows: The effusion may be the important pathologic fact, and the prognosis and treatment depend on a recognition of this. The progress of an inflammatory effusion within the skull may be arrested at the serous stage. The primary cause is commonly a near or distant focus of septic infection; the toxins formed by this, but not the microorganisms, stimulate the vessels of the meninges, brain or ependyma and choroid plexuses to the formation of excessive fluid. The primary cause may also be toxins generated by non-pyogenic organisms, and in rarer cases the excessive fluid results from causes other than toxins of microbic origin. The symptoms in the acute or chronic conditions, respectively, may simulate the gravest form of brain disease. The diagnosis is suggested when there is reasonable evidence that the symptoms are those of increased intracranial pressure, if other well-known conditions can be excluded, and it is strengthened by the recognition of the primary cause.

28. **Formation of Acute Gastric Ulcers.**—Elliott found that the substance tetrahydro-B-naphthylamine hydrochlorid, when injected subcutaneously in guinea-pigs, causes the formation of acute gastric ulcers. These result from the action of the gastric juice on the damaged mucous membrane, and they do not appear if the stomach is kept empty of food. The ulcers form in one or two hours, and they heal with great rapidity, unless they chance to become septic. Repair epithelium covers the raw surface within three days, and from this the glands are regenerated later. The drug was dissolved by heat to a 1 per cent. solution in neutral Ringer's fluid or in normal saline. On cooling, a yellow solution was obtained, which slowly darkened with keeping, while a brown precipitate appeared in the course of a few days. A fresh solution was generally employed. This was injected subcutaneously over the abdomen.

No signs of pain at the site of injection were caused, but in ten minutes or so the general toxic effects appeared. The hairs were raised over the shoulders and down the back, and the eyes were widely dilated, while the animal (cat and guinea-pigs) became very restless and shook its head up and down. Later, irregular convulsive movements appeared in the body and limbs, and the hind legs were partly paralyzed. There was no evidence of asphyxia by constriction of the bronchioles. If the dose of the drug was excessive, the phenomena of paralysis increased, so that the animal lay feebly on its side with the legs twitching weakly, and death followed in a few hours. This fatal result might occur with 2 to 4 c.c. of 1 per cent. solution.

With an appropriate injection the phenomena of excitement and poisoning passed away in a few hours, and the guinea-pig became to all outward seeming perfectly normal again. It ate its food eagerly, and ran about the cage without any token of gastric discomfort. None the less, acute ulcers were then always found to be present in the stomach, if the animal were suddenly killed. The ulcers developed with great rapidity. One or two hours after the injection, ulceration was always visible in the stomach. Externally, this could be recognized by purple-colored patches of congestion seen through the peritoneal coat. Within, the damaged area looked much as the stomach does when a corrosive acid has been swallowed, an irregular swollen patch of hemorrhage and erosion being surrounded by a wide margin of a grayish color without hemorrhage. These changes always occurred in the stomach. Occasionally small hemorrhagic areas were also visible in the mucous membrane of the colon, cecum and duodenum. These were caused by extravasation of blood from congested small venules; but the cells of the overlying mucous membrane seemed to be normal.

No deeply situated foci of destruction were ever observed. The appearances were simply those of a necrosis and erosion spreading downward from the surface, first through the protecting sheet of epithelial "mucous" cells, and then rapidly down the framework of the tubules. The cells seemed to be loosened from their basement membrane by the action of the invading gastric juice before they were actually killed and digested. In one hour after the injection the necrosis may have extended down through the entire depth of the mucous membrane. Repeated injections were given in a few cases. Each fresh injection was followed by the formation of some fresh ulcers, and the old ulcers remained septic, so that they extended through the muscularis mucosa, and even to the peritoneal coat. Apart from the spreading effects of such sepsis, there was no tendency noticed for the ulcers to remain and pass into a chronic state. Consequently, the experiments were not carried any further.

29. **Bronzed Diabetes.**—The most helpful outcome of the work here placed on record is the evidence which is afforded that, in cases of hemochromatosis, the accumulation of iron in the tissues is not, like the deposits of iron in cases of hemolytic anemia, due to any excessive destruction of blood-corpuscles, but rather to a failure to excrete iron by the usual channels. The investigations confirm those of others who have failed to find evidence of undue hemolysis in cases of the same kind, and tend to support the view put forward by Parker that the iron set free in tissue catabolism fails to be got rid of, and so accumulates.

30. **Infective Cases of Splenomegaly and Banti's Disease.**—In the spleen of six cases, three with the picture of Banti's disease, two with splenic enlargement and fibrosis, and one with splenomegaly examined by Gibson, there was found, by a special method of staining, an appearance which he interprets as a parasitic invasion of the organ by a streptothrix organism, this being in such a relation to the affected parts, at least in the cases of Banti's disease, as to leave no doubt in his mind that they are the cause of the pathologic condition. Many other spleens examined with the same object in view, several of which had pigmented spots, showed no such appearances. Two different appearances are described, one being present in four cases, the other in two, which at first sight suggests two different species of streptothrix. The stain with which the possibility of a parasite becomes a certainty is Wheal and Chown's method for staining clubs in actinomyces; briefly, it is a double stain, first by hemotoxylin, then by carbol fuchsin, the decolorization being effected by equal parts of absolute alcohol and saturated watery picric acid. No cultural proof is yet available that these structures are parasites.

Annales de Médecine et Chirurgie Infantiles, Paris

January 1, XVIII, No. 1, pp. 1-32

33 *Dentition, Helminthiasis and Growth as Scapegoats. (Trois vérités scientifiques. Trois erreurs populaires.) Gaujoux.
34 Proctoclysis for Children. (Le sérum continu intrarectal en médecine infantile.) E. Lesné.

January 15, No. 2, pp. 33-68

35 Inoperable Cancer of the Scalp on Boy of 14. Recurrence after Two Operations Since Age of 6. Etienne and Aimes.
36 Retention of Urine During Acute Stage of Epidemic Poliomyelitis. G. Schreiber and D'Allaines.
37 *Whooping-Cough. L. R.- Dumas.

33. **Teething and Growing Pains.**—Gaujoux comments on the way in which mothers ascribe everything wrong in their children from the first to the sixteenth year to teething, worms or growing pains. From these three scientific verities have grown great popular errors, leading to the neglect of symptoms of unsuspected cystitis, digestive disturbance or tonsillitis when a child has fever summarily ascribed to dentition, or bone or joint processes explained as "growing pains." Systematic examination of stools has shown that helminthiasis cannot be incriminated in fully 90 per cent. of the cases, but his own experience has shown that tapeworm is liable to be found in even young children who eat very rare beef, and that it is well to examine the stools for parasites in every case of anemia of obscure origin. He emphasizes also that there is certainly a local inflammation when a tooth makes its appearance, and the child's resisting powers are correspondingly depressed, rendering it more susceptible to morbid factors. The fact of growth, also, determines or favors various disturbances for which the physician should be on the lookout, retarded growth, stoppage or too rapid growth, pains from the latter, albuminuria at some stage of growth, menstrual anomalies, nervous troubles, headache, tendency to malformation in the chest or spine, palpitations, dyspepsia, etc. The physician should be thoroughly posted on all these and detect them in their incipiency in children in his charge. Inadequate respiration is an important factor, he thinks, in these growth disturbances, and in every case the task is to distinguish between the influence of the growth and of pathologic factors, as dentition and growth are essentially physiologic processes.

37. **Whooping-Cough.**—Dumas reviews the present status of our knowledge in regard to pertussis, stating that the evidence to date seems to incriminate the Bordet-Gengou bacillus and open a vista for promising treatment. The testimony yet in its favor is still far from conclusive. He adds that in tedious cases with frequent paroxysms of coughing, morphin may render useful service unless contra-indicated by albuminuria.

Archives Générales de Médecine, Paris

December, XCII, No. 12, pp. 1061-1140

38 Training the Respiratory Muscles. (Technique de l'éducation de la fonction respiratoire.) F. Gommaerts.

Archives des Maladies du Cœur, etc., Paris

December, VI, No. 12, pp. 753-922

39 The Syndromes of the Various Types of Cardiac Insufficiency. H. Vaquez.
40 Changes in the Blood in Anemia from Obstetric Hemorrhage. V. Wallich and P. Abrami.
41 Heart-Block. (Dissociation sino-auriculaire.) D. Danielopolu.

Bulletin de l'Académie de Médecine, Paris

December 30, LXXVII, No. 42, pp. 621-647

42 Description of Diabetes by Arabian Physician in Tenth Century. Dinguizli and A. Robin.
43 Technic for Examination of Sputum. F. Bezançon and A. Philibert.

Journal de Médecine de Bordeaux

December 21, LXXXIV, No. 51, pp. 821-836

44 Attenuated Criminal Responsibility. (Les aliénés devant la justice.) G. de Gardenal.

January 4, LXXXV, No. 1, pp. 1-16

45 *Iodin Treatment of Tuberculosis. L. Boudreau.

45. **Intensive Iodin Treatment of Pulmonary Tuberculosis.**—Boudreau regards iodin as the direct, specific and heroic procedure for tuberculosis, and declares that it transforms the system in a way amounting to a complete immunization, modifying the organic habits. He has been giving it systematically for the last ten years in treatment of pulmonary tuberculosis, pushing it to the limit of tolerance. The patient takes it in his beverages; it has a disagreeable taste only in plain water. He has used various preparations of iodin but prefers the tincture (the French tincture of iodin contains 1 part iodin to 12 parts 90 per cent. alcohol). He commences with small doses, carefully testing the tolerance, insisting that pure iodin is not so liable to cause symptoms of iodism as its salts. From 20, 60 or 100 drops a day of the tincture of the iodin, the patients pushed the doses themselves to 200 or 300 drops a day, carefully fractioned; one patient took 400 drops for a time in the summer without the slightest inconvenience. Signs of iodism were extremely rare and so slight as to be generally negligible. His experience has been mainly with pulmonary tuberculosis, but his results with renal tuberculosis were also so encouraging that he urges a thorough trial of the iodin treatment before removing a kidney for a tuberculous process. Iodin is the wonderful exception, he says, among microbicidal substances in that, fatal for microbes, it is a tonic for human beings. The dosage has to be individualized, some of the apparently mildest forms of pulmonary tuberculosis proving most tenacious and vice versa. Children of 6 or 7 take up to 40 or 60 drops a day without signs of intolerance.

Lyon Chirurgical, Lyons

December, X, No. 6, pp. 537-656

46 *Laryngo-Pharyngectomy for Cancer. L. Bérard and Sargnon.
47 Extraperitoneal Access to the Hypogastric Plexus and Its Ganglion. V. Rochet and A. Latarjet. Commenced in No. 5.
48 *Grafts of Thyroid Tissue. (Greffes thyroïdiennes.) H. Paschoud.
49 Direct Transfusion of Blood. Suturing Artery to Vein. Briau.

46. **Resection of the Throat for Cancer.**—Two cases are reported and other recent cases from the literature are briefly cited. The immediate mortality was 19 per cent. including seven cases of early recurrence. The technic is discussed and the fact that the operation on the pharynx does not seem to enhance the danger of the intervention as the region is accessible. With laryngectomy alone, drainage is so imperfect that gangrene cannot be warded off. In the cases cited, three of the patients are in good health after intervals of seven years, four years and three years among those whose fate is known.

48. **Thyroid Grafting.**—Paschoud gives three colored microphotographs besides a number of illustrations in the text accompanying his history of thyroid grafting and account of his own work in this line. Thyroid tissue seems to be particularly favorable for engrafting; it frequently lives, grows and functionates, and this method of treating myxedema and cachexia strumipriva is not to be disdained. No benefit is known to date from thyroid grafts in tetany and cretinism. At the same time, Paschoud remarks, he has been unable to find in all the literature even one case in which the remote results were favorable enough to justify the assumption of any real efficacy from the thyroid-grafting operation. He relates the case of a woman who had a tumor develop in the region years after removal of a parenchymatous goiter. It was removed at the sixth year. Again a tumor developed in the region, this time in the scar, and this tumor was removed eight years after the second. Each of the tumors had all the characteristics of thyroid tissue, and he is convinced that each developed from an engrafted scrap of the thyroid during the preceding operation. The bibliography on thyroid grafting closes the article, a list of 147 titles.

Lyon Médical, Lyons

January 4, LXVI, No. 1, pp. 1-56

50 Symptoms from Anemia of the Brain with Heart-Block. (Pauses ventriculaires et accidents vertigineux dans la maladie de Stokes-Adams. Troubles de conduction nodo-ventriculaire.) L. Gallavardin.

Presse Médicale, Paris

January 3, XXII, No. 1, pp. 1-12

51 Abbott's Treatment for Curvature of the Spine. L. Ombrédanne.
52 *Technic for Amputation of Breast for Cancer. I. Tansini.
53 Artificial Lipoid Membranes. E. Fourneau.

January 7, No. 2, pp. 13-20

54 Renovation of the Blood under Salvarsan in Syphilis. M. P. Weil and L. Guénot.
55 Spinal Anesthesia. J. M. Bartrina.

52. **Amputation of the Breast.**—Tansini's method and its superior advantages in many cases were discussed recently in THE JOURNAL, 1913, lxi, 2202.

Revue de Gynécologie, Paris

December, XXI, No. 6, pp. 449-620

56 *Non-Malignant Tumors of the Breast. II. M. Letulle.

56. **Non-Malignant Tumors of the Breast.**—In this second part of his article Letulle discusses the histology and pathogenesis of benign mammary tumors, with two colored plates and sixty illustrations in the text. He traces all non-malignant tumors of the breast, solid or cystic, to some embryonal malformation.

Revue Médicale de la Suisse Romande, Geneva

December 20, XXXIII, No. 12, pp. 873-964

57 Bacteriologic Study of Febrile Abortion. C. Waegell.
58 *Ether for Lavage of the Peritoneum. L. Jeanneret.

58. **Ether for Lavage of the Peritoneum.**—Jeanneret believes that the recovery of the child of 7 whose case is described can be credited only to the use of the ether in a late stage of acute peritonitis from appendicitis. He reviews several unpublished cases from the experience of others, all tending to sustain Souligoux' claim that the method represents a great improvement in the prognosis of infection of the peritoneum. (The technic was described in detail in De Tarnowsky's recent article in THE JOURNAL, January 24, p. 281.)

Revue Pratique d'Obstétrique et de Gynécologie, Paris

December, XXI, No. 12, pp. 353-384

59 *Gastro-Intestinal Hemorrhage in Two New-Born Infants Nursing Same Woman. A. Bonnet-Laborderie.
60 Popular Prejudices in Regard to Menstruation. Duroy.
61 Jaundice after Abortion; Two Cases. Anderodias and Dronin.

59. **Gastro-Intestinal Hemorrhage from Breast Milk.**—The new-born child of a supposedly healthy woman had hemorrhages from the stomach and bowels as it began to nurse its mother. The child was transferred to an incubator, and another newly born child placed at the woman's breast. In a day or so this infant also developed gastro-intestinal hemorrhage, and a third infant given her milk vomited a yellowish fluid. Analysis of the breast milk showed only 16 gm. fat but 36.9 gm. casein by weight per thousand; the normal average is respectively 40 and 11 gm.

Semaine Médicale, Paris

January 7, XXXIV, No. 1, pp. 1-12

62 *The Loose Uterus. (L'utérus ballant.) F. Lejars.

62. **The Flopping Uterus.**—Lejars applies this term to the freely movable uterus which alters its position, swaying to right or left, backward or forward at will, and thus giving rise to intermittent symptoms in puzzling variety. In one such case the fundus of the uterus could be felt in the posterior cul-de-sac, enlarged and tender. The evening before the operation to correct the exaggerated retroflexion, the displacement was determined anew, but when the abdomen was opened the fundus was found to have flopped over in the night and was in anteflexion. The ligaments were shortened, the appendix was removed, and all disturbances were cured. If the possibility is once thought of that the fundus of the uterus may be free to move around, this will often explain puzzling syndromes which suggest trouble in the adnexa, or tumors, etc. The disturbances are generally increased during menstruation. Repeated examination, with the pelvis raised or lowered, will generally reveal the excessive movability of the uterus; an abnormally long and flexible isthmus is the cause. Shortening the ligaments may cure all the disturbances and again it may not. Lejars says it is not a question of operative treatment but of general therapeutics, often quite complex, the various elements of which must be sought out and studied. He quotes Hölder's statement that in 142 cases of movable retroflexion, corrected by the Alexander-Adams operation, one-third of the women in whom the orthopedic result was nil had no disturbances, while a third of those with perfect orthopedic outcome yet suffered from functional disturbances. The functional outcome is due less to the attitude of the uterus than to the cure of complications, prolapse or endometritis.

Berliner klinische Wochenschrift

January 5, LI, No. 1, pp. 1-48

63 Trauma and Kidney Disease. (Unfälle und Nierenerkrankungen.) Goldscheider.
64 Trephining Leaving Lattice-Work of Bone. (Gittertrepanation.) L. Dreyer.
65 Foreign-Body Injury of Esophagus with Perforation of the Aorta. H. Chiari.
66 *What Acute Infections Have Preceded Leukemia? (Eine Arbeitshypothese für die Erforschung der Leukämie.) D. v. Hansemann.
67 *Operative Treatment of Exophthalmic Goiter. (Wandlungen und Fortschritte in der chirurgischen Behandlung der Basedow'schen Krankheit.) H. Klose.
68 *Radiotherapy of Uterine Cancer. F. Heimann.
69 Gall-Stone Found in Liver. S. Siber.
70 Case of Acute Erotic Paradidymitis. J. Heller.

66. **Leukemia.**—Hansemann is convinced that some acute infectious disease is the forerunner of leukemia and allied conditions. Acute leukemia is in itself the clinical picture of an acute infectious disease or intoxication. Many of its manifestations resemble those of severe diphtheria and other septic diseases; but the differences must also be emphasized, the non-contagiousness, and the impossibility to date of transmitting the disease to animals. One writer has recently stated that he had found a history of malaria in all his cases. There is much to sustain the hypothesis that the tonsils are generally the primary seat of the infectious process. Hansemann urges all to investigate the previous history in every case of leukemia so that a composite picture may be obtained as to the infections passed through before the onset of the leukemia. If these data in cases of leukemia are reported to him, he will compile and compare them and with a little cooperation in this way much light may be thrown on the leukemias. (His address is Prof. Dr. D. von Hansemann, Winklerstrasse 27, Grune, Berlin, Germany.)

67. **Operative Treatment of Exophthalmic Goiter.**—Klose expatiates on the increasing safety and benefit from operative treatment in Basedow's disease since the practice has been adopted of resecting the thymus along with the thyroid, or removing the entire thymus. The danger with thyroidectomy in exophthalmic goiter seems to be acute intoxication from the thymus after the thyroid is gone. At Rehn's clinic there were eight deaths from this cause alone—"thymus deaths"—in 130 operative cases of exophthalmic goiter up to 1911, but since then the thymus has been resected along with the thyroid, and there have been no deaths in the 200 cases. The capsule of the thymus is left, as its removal is liable to bring on serious hemorrhage. The operation is simple and easy but there must be a week or two of preparation, psychic, dietetic and medicinal. General anesthesia is not used; ice is applied to the goiter and heart. Local anesthesia and systematic accessory resection of the thymus have placed the surgical treatment of Basedow's disease on a new plane.

68. **Radiotherapy of Uterine Cancer.**—Heimann reports eighteen cases of inoperable uterine cancer in which remarkable benefit was realized in all but five from exposure to mesothorium and Roentgen rays. In six of the patients the improvement amounts to a clinical cure, and he witnessed no by-effects from the exposures in any instance. He gives the microscopic findings in a scrap from a cervix cancer before and after the exposures, showing the complete disappearance of the numerous cancer nests.

Deutsche medizinische Wochenschrift, Berlin

January 1, XL, No. 1, pp. 1-56

71 *Treatment of Heatstroke, Sunstroke and Electric Injuries. (Behandlung akut bedrohlicher Erkrankungen.) Grober.
72 *Operations on Diabetes. (Diabetes und chirurgische Erkrankung.) F. Kraus and F. Karewski.
73 The Work of the Vessel Walls. (Arbeit der Gefässmuskeln.) K. Hürthle.
74 *Thread Test for Stomach Acidity. (Zur intrastomachalen Kongofadenprobe.) G. Schwarz.
75 Complement Fixation in Tuberculosis. J. Davidovics.
76 Behring's Method of Vaccination against Diphtheria. B. Hahn and F. Sommer.
77 Diathermia in Otology. F. Mendel.
78 Relations between Psoriasis and Tuberculosis. Warnecke.
79 Style-Book for Abbreviations in Medical References Adopted by German Medical Press. (Einheitliche Abkürzung der Titel medizinischer Zeitschriften und Werke in Quellenangaben.) J. Schwalbe.

71. **Heatstroke, Sunstroke and Electric Accidents.**—Grober reiterates that in these conditions artificial respiration can

never be applied too early nor kept up too long, but with heat or sunstroke it must be done cautiously not to bring on or exaggerate cerebral hemorrhage. Especially as the patient revives, attention should be paid to possible paralysis from this cause and the necessity for quiet which it imposes. Resuscitation has often occurred after ten or twelve hours of continuous artificial respiration. When the veins are much congested, generally in elderly, plethoric persons, and also in case of emphysema of the lungs or chronic bronchitis or tuberculosis, venesection, withdrawing 250 or 400 c.c. of blood may be useful; supplementary saline infusion is not needed. In presence of heatstroke, the physician must not forget in his solicitude for the patient to look after the welfare of others and ward off further cases of heatstroke, as the same meteorologic and other conditions are liable to affect a number of persons at the same time. A tendency to convulsions or delirium with either heat or sunstroke may require small doses of some sedative and it should not be withheld too long. In treatment of electric burns he has found most useful a liniment of lime water and olive oil in equal parts.

With an accident from a high power electric current, artificial respiration should be renewed again and again even after all hope seems lost; massage of the heart may also prove useful. Lumbar puncture has rendered good service in some cases. To get rid of the degeneration products caused by the passage of the powerful current through muscles and liver, venesection and saline infusion have proved useful in many cases after the emergency indications with regard to respiration and circulation have been met.

72. **Operations on Diabetics.**—Kraus gives the experiences and views of Payr, Naunyn, Minkowski and von Noorden in this line, and Karewski reviews his own experience with surgical treatment for thirty years all on the same principles. He states that seven of sixty-eight diabetic patients died of coma after operations on aseptic tissues, that is, 11.8 per cent. The mortality from coma in sixty-nine cases of operations in infected tissues was fifteen, that is, 21.7 per cent. He insists on the necessity of examining for diabetes every patient before every operation, as diabetics require treatment, according to the strictest principles of internal medicine before, during and after any surgical measure. Under aseptic conditions, the wounds heal smoothly but infectious processes run a malignant course and increase the danger of the constitutional disease. He would restrict all operations on diabetics to those with vital indications or when necessary to restore the earning capacity. With these limitations, diabetes should not modify the usual principles of surgical procedure. Naunyn regards postoperative coma as an acidosis. All emphasized the greater susceptibility to infection, and the unfavorable influence from any operation on the course of the diabetes by the psychic shock, the injurious influence of the anesthetic, loss of blood, restricted diet and more or less impairment of the respiration and circulation. Minkowski says that suspicion of diabetes should compel the minutest asepsis and avoidance of all antiseptics liable to have a toxic action, refraining from constricting bandages, infiltration anesthesia, ligatures *en masse*, etc., with special care for the diet and supply of alkali to neutralize the acid.

74. **Thread-Test for Gastric Acidity.**—Schwarz uses a solid gelatin capsule containing a heavy powder giving a neutral reaction. The capsule is pierced and a thread drawn through it which has been soaked for half an hour in a 0.25 per cent. aqueous solution of congo red. The thread is 120 cm. long and after passing through the capsule, is tied over it and the capsule is then swallowed half an hour after a test breakfast. The free end of the thread is held in the hand. After fifteen minutes the thread is drawn out, the capsule having dissolved in the stomach in the meanwhile. The end of the thread which has been in the stomach is now dark blue or violet proportional to the amount of hydrochloric acid in the stomach content; if the thread is still red, this shows anacidity or that the capsule has stuck somewhere on its way. By this simple means the condition in regard to acidity in the stomach can be determined without inconveniencing the patient.

Medizinische Klinik, Berlin

January 4, X, No. 1, pp. 1-46

80 *Tuberculous Epididymitis. W. Anschütz.
81 *Non-Malignant Stenosis of the Pylorus. I. Boas.
82 *Diabetes; Nature and Treatment. W. Falta.
83 Diathermia and Electrocoagulation in Urology. H. Wossidlo.
84 Secondary Tuberculosis. G. Liebermeister.
85 Aviation and the Eyes. (Die Augen der Luftfahrer.) Halben. Concluded in No. 2.

80. **Tuberculous Epididymitis.**—Anschütz discusses the questions whether the testicle is liable to become involved; whether removal of one testicle and epididymis will prevent the involvement of the other side; the influence on the outcome of tuberculous lesions elsewhere; the influence of castration on a tuberculous process in the prostate and seminal vesicles, and, lastly, what are the consequences of double castration. He tabulates the details and later history in 174 cases of unilateral castration; recurrence followed in three years or later in only 30 per cent. The condition of the prostate and vesicles at the time of the operation seemed to have no influence on the ultimate outcome. Double castration was followed by complete recovery in 82 per cent of the twenty-eight cases free from other tuberculous complications outside of the prostate and vesicles but only 17 per cent. were living three years later of the twenty-three with complications elsewhere. Tuberculous epididymitis not given operative treatment spreads to the other side in from 50 to 75 per cent. of all cases. When both sides are involved, he advises unilateral castration and conservative resection or curetting on the other side, unless there is already a fistula on both sides, when double castration should be the rule. Microscopic foci in the testicle are liable to heal after removal of the epididymis. Further experience in this line is urgently needed to determine whether this alone is sufficient in case one side only is affected. Anschütz has prepared some question-blanks to collect data on this subject, and will gladly send some on demand. (His address is Prof. Dr. W. Anschütz, Kiel, Germany.)

81. **Treatment of Non-Malignant Stenosis of the Pylorus.**—This article is practically a sequel to the one summarized in THE JOURNAL, Dec. 6, 1913, p. 2110. Boas here gives minute details how to determine the exact condition in the stomach, and means to combat insufficiency of the pylorus. Residue in the stomach twelve hours after a meal indicates that the pylorus is obstructed but not necessarily that there is dilatation of the stomach. With dilatation there is a pronounced succussion sound on slow change of position; a splashing sound is not decisive, at least fasting. With stenosis, part of the stomach wall stiffens or bulges on systematic rubbing of the fundus. The degree of stiffening or bulging is proportional to the extent of the obstruction offered by the pylorus. The presence of residue can be determined by roentgenoscopy but Boas prefers his test supper and examination of the stomach contents next morning as more instructive.

The degree of stenosis is readily determined by giving fasting 400 c.c. water to which have been added fifteen drops of an aqueous solution of some stain (chlorophyl) and after half an hour the stomach contents are forced out by expression or siphoned out. If not more than 50 c.c. of the water is found then in the stomach the pylorus must be regarded as normally permeable. A more convenient but less reliable means is by measuring the intake of fluids and total output of urine; this should be done for eight days to be approximately reliable. If the twenty-four-hour urine totals 500 c.c. or less the stenosis must be serious; with 500 to 800, moderately severe, and above this merely slight stenosis may be assumed.

In treatment the aim must be to modify the diet until there is no retention. Exclusively fluid but nourishing food at first, milk, cream, eggs, fruit, meat jellies and vegetables in pulverized form. If there is no residue with this, after three or four days one or two rolls or zwieback can be added, gradually adding soft mashed potato, and other vegetable purées, beaten omelet, etc. If not enough of the above to sustain the patient's strength can be taken without residue, the surgeon should be called in unless the patient learns to expel

the stomach content himself by expression. The stomach-tube is swallowed; the patient inspires deeply, and then compresses his abdominal wall by straining as at stool. This can be done on retiring or in the morning and with a little practice one can become quite skilful at it. Boas has one patient who was advised twenty-five years ago to have gastro-enterostomy done to remedy the stenosis left from an ulcer. The man refused an operation and now, at the age of 63, still attends regularly to business and does not restrict his diet at all but relieves himself by this systematic expression. Boas has little faith in thiosinamin treatment or mechanical stretching of the pylorus. In conclusion, he remarks that the old saying "the internist must think more surgically" should be reversed, as the pressing need now is for the surgeon to be more of an internist.

82. **The New Views on Diabetes.**—Falta reviews the revolutionary history of our knowledge of diabetes in the last few years, and explains the reasons for his practical conclusions that the diet of diabetics should be predominantly boiled cereals. When baked, the grains are broken up in a different way and absorption proceeds under conditions that do harm. In gruels, porridges and soups, however, all the cereals are available and also rice, tapioca, potato, corn and millet, alone or in combination. He thinks that the greater consumption of meat is possibly responsible to a certain extent for the increasing frequency of diabetes. When there is a predisposition to diabetes, the abuse of meat should be warned against; it is possible that a strict vegetarian diet, with cereals boiled instead of baked, might help to ward off the disease better than the restrictions hitherto in vogue.

Münchener medizinische Wochenschrift

January 6, LXI, No. 1, pp. 1-54

86 Salvarsan-Copper in Frambesia, Malaria, Amebic Dysentery and Leprosy. G. Baermann.
87 Poison and Disease. (Gift und Krankheit, nach Beobachtungen an experimenteller, chronischer Bleivergiftung.) W. Straub.
88 Action on Embryonal Cells of Ether Plus Radium. V. Haecker and N. Lebedinsky.
89 Aphasia and Mental Disease. Kleist.
90 Abderhalden's Dialysis Serodiagnosis. E. Wegener.
91 Median Perineal Prostatectomy. F. Berndt.
92 *Autolysate Treatment of Cancer. Lunckenbein.
93 *Streptothrix and Banti's Disease. A. G. Gibson.
94 Roentgenoscopic Measurements of the Pelvis. (Röntgenologische Beckenmessung.) E. Kehrer and F. Dessauer.
95 Acute Fetid Diphtheric Bronchitis. W. Beyer.
96 *Intravenous Injection of Camphor. Schüle.
97 Rectal Cancer. (Mastdarmkarzinom.) H. Lindner.

92. **Autolysates in Treatment of Cancer.**—Lunckenbein reports favorable results in fifteen cases of inoperable cancer from intravenous injection of an autolysate from the patient's own tumor. He puts up the autolysates in fused tubes, finding that they keep three or four weeks on ice. He does not know that anybody else has used the intravenous route, but the effect is so much prompter and greater that he advocates it systematically. In fact the effect is so pronounced that it may be possible to use a cancer extract from another person. The relief of pain is prompt and effectual; this was most striking in one case of metastatic sarcoma in the spine in which morphin brought no relief, but the pains subsided in a few hours after intravenous injection of the autolysate. Another advantage of the treatment is that it acts on both the primary and the metastatic tumors. In one case no durable effect was apparent from the carcinoma extract and the tumor proved later to be a sarcoma. The cases of which illustrations before and after are given show the remarkable improvement in one or two weeks.

93. **Streptothrix as Responsible for Banti's Disease.**—Gibson writes from Oxford to say that he found evidences of the work of the streptothrix in the spleen in five of 300 necropsies, and Banti's disease had been the cause of death in three of the group, a woman and two children.

96. **Intravenous Injection of Camphor in Ether.**—Schüle states that he found no evidence of a reaction on the part of the vein to intravenous injection of ether; no thrombus formed even when the injection in the median vein was repeated twenty and thirty times. He commends ether as the vehicle for camphor in intravenous injection, and reports experiences in this line. There was no trace of hemoglobin in the urine after injection of 1 c.c. of ether, and there seems to be no danger of embolism. One tuberculous patient was taking a course of intravenous injections of iodoform, and Schüle gave him 40 or 60 intravenous injections of 0.25 or 0.5 c.c. of ether on each arm. The veins showed scarcely any signs of a reaction during the several months' course, at the close of which the patient was notably improved.

Therapie der Gegenwart, Berlin

January, LV, No. 1, pp. 1-48

98 *Indications for and Results of Splenectomy for Internal Disease. G. Klemperer.
99 *The Ear and the General Practitioner. (Was kann der praktische Arzt zur Verhütung und Behandlung von Ohrerkrankungen tun?) Claus.

98. **Splenectomy in Internal Diseases.**—Klemperer says that the experiences to date show that anemia and cachexia accompanied by enlargement of the spleen are liable to be benefited by removal of the spleen in Banti's disease, in hemolytic jaundice, and in case of a new growth or tuberculous process in the spleen. But splenectomy does no good but rather harm in malaria, syphilis, lymphosarcoma, leukemia, granuloma, amyloid and congested spleen. Splenectomy in internal diseases with spleen of normal size is one of the latest innovations in internal medicine. It is less than a year since the first operation of the kind was done for pernicious anemia, and Klemperer has already ten cases to report. One elderly woman with preexisting pneumonia and a young woman with advanced heart disease did not survive the operation. The eight others were in the last stages of pernicious anemia, but all showed marked improvement both in the general health and the blood picture after removal of the spleen. The benefit became progressively evident and in one case amounts to a clinical cure; in the others the blood still shows the characteristics of the pernicious anemia type notwithstanding the great improvement. Klemperer recalls that this is liable to be the case also in hookworm and bothriocephalus anemia even after the parasites have been expelled. He summarizes his ten case histories; the surviving patients were between 24 and 66; the duration of the disease from six months to two years; the sexes were equally divided. One woman of 36 was unmarried; one had had nine children.

99. **Prevention and Treatment of Ear Disease.**—Claus deplores the frequent neglect of examination of the ear by the general practitioner. The slightest impairment of hearing should be the signal for minute examination of the ears, he declares, and that all catarrhal affections of the upper air passages, especially of the nose and nasopharynx, require energetic treatment to prevent or cure injury of the ear from them. He says of the tonsils that Alexander has reported the significant fact that during a severe scarlet fever-measles epidemic at Vienna all the children whose tonsils had been removed were spared by the epidemic. Removal of the tonsils is thus both directly and indirectly an important means for prophylaxis of ear trouble. The adhesive processes which entail total deafness are the final outcome of untreated or inadequately treated catarrhal processes in the middle ear. At the time they probably could have been easily cured by the air douche. The main point is for the general practitioner to suspect and diagnose acute otitis media, which may be difficult in infants. Examination with reflector and speculum, cleaning out the ear by rinsing and drying, puncture of the membrane if it bulges, or if fever and pain keep up, oiling the outer ear to protect it against the secretions, draining with cotton or gauze, dry heat and bed rest—the general practitioner can do all this, with supplementary air douches when the secretion is drying up, continuing these douches until hearing is fully restored.

Paracentesis of the tympanic membrane is indicated even more urgently in a middle ear affection with measles or scarlet fever. With immediate diagnosis and provision for drainage, the course and prognosis may be like those of ordinary otitis media. If sudden deafness, dizziness, nystagmus and vomiting indicate involvement of the internal ear, the

mastoid should be opened up at once to relieve the pressure in the drum and labyrinth. Fortunately, intracranial propagation of the suppuration is rare with the acute infectious diseases. Early diagnosis and antitoxin treatment of middle ear complications with diphtheria are of great importance. Diphtheric otitis seems to run a milder course since the introduction of antitoxin. He says that neurolabyrinthitis is not infrequent with mumps. Treatment can only be symptomatic; the facial paralysis sometimes observed retrogresses entirely as a rule.

The otitis media for which influenza is responsible frequently entails mastoiditis but the internal ear is rarely involved. Fulminating meningitis follows in many cases, or inflammation of the auditory, the fifth, sixth and seventh cerebral nerves. With typhoid, there is frequently a catarrhal otitis media; severe suppuration is rare but is liable to entail intracranial complications. With epidemic meningitis, treatment of the ear is useless. With tuberculous infection of the middle ear there is seldom any pain but the hearing becomes rapidly impaired; the ear should not be neglected in examining tuberculous patients. With syphilis, the middle ear may develop a catarrhal process secondary to ulceration in the nasopharynx. When the internal ear is affected, the hearing may become suddenly impaired to total deafness in a few hours or days. Reduction of bone conductivity is pathognomonic.

Instillation of alcohol may dehydrate a bean or pea in the ear and thus facilitate its removal; oil will smother an insect, but if a foreign body is not easily removed with these measures any further manipulations by the non-specialist should be regarded as malpractice. The same applies to trauma affecting the ear; any attempt to rinse or drain may set up infection. The ear should simply be bandaged after testing the hearing and the patient sent to a specialist, bearing in mind that every accident is liable to have a train of legal proceedings. In conclusion he warns that every patient applying for relief from headaches, dizziness, nausea, vomiting or hemiparesis should have the ears examined and if the findings are not quite clear, a specialist should be consulted. For lack of this examination of the ears in time many persons die annually in the big cities from abscess in the brain, sinus thrombosis or meningitis which might have been warded off if the ears had been examined in time.

Zeitschrift für Geburtshilfe und Gynäkologie, Stuttgart

LXXV, No. 2, pp. 231-492. Last indexed Jan. 10, p. 173

100 *Action of Internal Secretions on the Activity of the Uterus. H. Guggisberg.
101 The Blood-Picture and Coagulation of the Blood in Normal Pregnant and Parturient Women and in Those with Excessive and Deficient Thyroid Functioning. E. Hofmann.
102 Behavior of the Thyroid in Pregnancy and the Puerperium in Berne District Where Goiter is Endemic. B. Müller.
103 *Mother and Child Are Independent Biologic Entities. (Biologische Beziehungen zwischen Mutter und Kind.) R. v. Fellenberg and A. Döll.
104 *Induction of Abortion and Sterilization at One Sitting. (Zur einzeitigen Aborteinleitung und Tubensterilisation.) E. Hofmann.
105 *Ileus During Pregnancy, Labor and Puerperium. F. Ludwig.
106 Dermoid Ovarian Cyst Worked Loose and Found in Pouch of Douglas. (Zur Lostrennung von Ovarialcysten.) F. Steinmann.
107 Eruption Simulating Purpura with Suppuration in Ovaries and Tubes. (Purpuraähnliches Erythem im Verlauf einer Adnexerkrankungen.) M. Walthard.
108 Assimilation Pelvis: Funnel-Shaped, of Kyphotic Type. (Die Assimilationsbecken der Heidelberger Universitäts-Frauenklinik.) M. Bachrach.
109 Action of Thyroid Extract on Motor Functioning of the Uterus. (Zur Frage: Thyreoidea und Wehentätigkeit.) E. Mosbacher.
110 *Active and Conservative Treatment of Streptococcus Abortion. M. Traugott and F. Ebeler.
111 Technic for Hysterectomy. (Ueber der Präparation von Ureter und Uterina bei der erweiterten Uteruskarzinomoperation.) A. Mayer.
112 Posteclamptic Amnesia. B. Aschner.

100. **Action of Internal Secretions on the Uterus.**—Guggisberg reports experimental research which apparently demonstrates that the internal secretion of not only the hypophysis and the thyroid but also of the placenta have a direct influence on the motor functioning of the uterus. The multiple functions of the placenta are illustrated anew by his work. In the serum before and during delivery there does not seem to be any accumulation of substances which act to promote the motor functioning of the uterus. But a substance displaying this action was present in the extract of uterus tissue from a cow that had to be slaughtered during the act of delivery.

103. **Biologic Relations between Mother and Child.**—Fellenberg and Döll have been studying whether the mother's antibodies, etc., pass to the fetus or to the nursing child, and found nothing to sustain this assumption in their extensive research. The fetus, they say, seems to be an individual entity, its cell-chemistry complete and ready to produce its own antibodies as required, independently of the mother.

104. **Abortion Plus Sterilization at One Sitting.**—Hofmann describes a method which has been applied successfully in twenty cases of advanced kidney, heart or lung disease and the loss of blood was less than with other technics while asepsis can be depended on and the operation is so simple and brief that it can be done under local anesthesia at need. Through a median abdominal incision the uterus is drawn up and slit on the median line only enough for the ovum to be expelled by slight pressure. The decidua is cleared out with the curet and the incision sutured with three catgut stitches. The tubes are freed from their mesosalpinx, then a silk ligature is thrown around each, 1 or 2 cm. from the angle, and the stumps are carefully buried between the layers of the peritoneum with a running silk suture. The vertical incision, the complete removal of the decidua, and the fact that no attempt is made to drain anywhere, distinguish the method from others in vogue.

105. **Ileus in Connection with Child-Bearing.**—Ludwig had his attention called to this subject by a case of ileus from adhesions in a ii-para at the eighth month. The gangrenous stretch of intestine, 40 cm. long, had to be resected and the living child taken with forceps. The mother was discharged in good health the twenty-sixth day. He has found ninety-five cases on record of ileus in connection with child-bearing, and adhesions were responsible in 28; volvulus in 13; tumors in 25; invagination in 4, and simply the enlarged or retroflexed uterus in 10. It is remarkable that hernia was responsible for the ileus in only 7 cases; outside of pregnancy, incarceration of a hernia is by far the most frequent cause of ileus.

110. **Treatment of Abortion.**—Traugott is convinced that the principle of treatment of abortion with streptococci in the vagina or blood is to leave the emptying of the uterus to Nature, combating the infection by keeping the uterus still with bed rest and ice and leaving it otherwise entirely alone. Under this expectant quiet the fever goes down, the streptococci do not grow more virulent and they gradually disappear. When this is realized, the uterus is curetted; at this stage it is harmless. In forty cases managed in this way the patients recovered without complications, including twenty-two who had fever on entering the clinic. The temperature became permanently normal in less than four days in this latter group. The patients were in the hospital for an average of thirteen and a half days before the curetting was done, and afterward for an average of four days. The uterus cavity was found entirely empty at the curetting in only nine of the forty cases, but there was no morbidity or mortality in the whole series, and he commends this principle for general adoption as applicable anywhere and bound to give better results than any other method. The communication issues from the women's department of the public hospital at Frankfurt in charge of Walthard.

Ebeler, on the other hand, advocates digital evacuation of the uterus after abortion, regardless of whether there is fever or not. His statistics show immediate return of normal temperature in 111 of 148 cases (75.3 per cent.); in an additional 12.8 per cent. the temperature returned more gradually to normal, without complications. In 4.9 per cent. complications developed which terminated in recovery. The mortality was 4.9 per cent., but in only 0.69 per cent. could the method of treatment be incriminated.

Zeitschrift für klinische Medizin, Berlin

LXXIX, Nos. 1-2, pp. 1-176. Last indexed Jan. 3, p. 82

113 Diabetic Coma Not an Acid Intoxication. (Zur Frage der Säurevergiftung beim Coma diabeticum.) J. Masel.
114 Tardy Coagulation of Blood with Endemic Goiter. (Blutgerinnung mit bes. Berücksichtigung des endemischen Kropfes.) J. Bauer.
115 Clinical and Serologic Study of Case of Paroxysmal Hemoglobinuria Brought on by Cold. O. Lindbom.
116 The Virus of Fowl Leukemia. V. Ellermann.
117 The Iron Metabolism with Pernicious Anemia, etc. (Eisenstoffwechsel.) Queckenstedt.
118 Concentration of the Blood Serum in Anemia and Blood Disease. E. Hendorfer.
119 Mechanism of Improvement in Circulation in Erect Position. (Ursachen der Orthopnoe. II. Die kardiale Orthopnoe.) L. Hofbauer.
120 *Influence of Emotions and Mental Strain on the Heart. (Einfluss der Gemuthsbewegungen und geistiger Ueberanstrengung auf das Herz, insbes. auf die Entstehung der Arteriosklerose.) J. Pawinski.

120. **Influence of Emotions and Excessive Brain Work on the Cardiovascular System.**—Pawinski says that the human brain manifests its feelings through the heart. The intimate connection between the emotional sphere and the action of the heart is a long familiar fact, but it can never be reiterated too often as the physician by suggestion rather than drugs can be such a power for good in many cases. Among 25,000 cases of cardiovascular disease, Pawinski found that grief or worry had been an important factor in 8.6 per cent. of 3,156 cases of arteriosclerosis in men; it seemed to be the exclusive factor in 3.2 per cent. The corresponding figures for angina pectoris were 13.4 per cent. in 1,074 cases. It ranks fourth here in the list of manifest factors, following tobacco, obesity and alcohol in turn. In women, obesity is the predominant factor in angina pectoris, but next to this emotional stress; the marked influence of grief or worry was evident in 14.2 per cent. of 224 cases of angina pectoris in women. It seemed to have been the exclusive factor in 1.1 per cent. and also in 4.1 per cent. of 943 cases of sclerosis of other vessels.

Excessive brain work could be incriminated in 9.2 per cent. in 1,075 cases of coronary sclerosis in men; alone, in 1.9 per cent. In 2,081 cases of sclerosis of other vessels, it could be incriminated in 4.5 per cent.; alone in 1.7 per cent. Excessive brain work thus is, next to syphilis, the leading factor in sclerosis in men. Grief, worry and excessive brain work, especially when combined, depress the innervation of vital organs and derange the metabolism, and the cardiovascular apparatus bears the brunt of the disturbance first and foremost. Of all occupations calling for mental effort under unfavorable conditions, the medical profession, he declares, takes the lead. Excessive mental, emotional and even physical stress, the demands on their sympathy, are the cause of the frequent development of arteriosclerosis in physicians. Lawyers have to work under similar but less wearing conditions, also big manufacturers, bankers, authors, and the leaders of political parties.

Zentralblatt für Chirurgie, Leipsic

January 10, XLI, No. 2, pp. 49-88

121 Resection of Lower Esophagus for Cancer. W. Meyer (N. Y.).
122 Management of Stump of Duodenum. (Zur Behandlung des Duodenalstumpfes bei der Resektionsmethode Billroth II.) W. Meyer (N. Y.).
123 *Technic for Obliteration of Artificial Anus. C. Bayer.
124 *The Blood after Removal of Ruptured Spleen. Kreuter.

123. **Simple Technic for Closing Artificial Anus.**—Bayer has applied in two cases with eminent success the technic he describes. He loosens up the mucous membrane for a short distance in both the afferent and efferent loop, and sutures this alone, thus restoring the continuity of the mucosa tube without attempting to suture the other layers of the intestine, merely suturing the skin above.

124. **The Blood after Removal of Healthy Spleen.**—The spleen in a healthy boy of 15 had been crushed beyond repair in an accident. The splenectomy followed at once and by the end of the sixth week the blood picture had returned almost completely to normal. The reaction to injection of epinephrin or pilocarpin, fasting, was similar in every respect to that in normal persons with healthy spleens.

Zentralblatt für Gynäkologie, Leipsic

January 10, XXXVIII, No. 2, pp. 65-112

125 Eclampsia after Abortion at Third Month. (Früheklampsie.) K. Bollag.
126 Technic for Mesothorium Therapy. J. Braude.
127 Abderhalden's Serodiagnosis of Pregnancy. (Abderhalden's Dialysierverfahren lässt bei Kühen die Trächtigkeit nicht frühzeitig erkennen.) K. Behne. (Abderhalden'sche Reaktion und ihre Anwendungen.) R. Akimoto.

Policlinico, Rome

January 4, XXI, No. 1, pp. 1-40

128 Lumbar Puncture for Idiopathic Headache. G. Mingazzini.

Rivista Ospedaliera, Rome

December 31, III, No. 24, pp. 1081-1126

129 *Nostril Symptom in Pneumonia. (Il sintoma dell'aleggiamento passivo delle pinne nasali nella polmonite crupale.) A. Carducci.
130 The Phenolsulphonephthalein Test of Kidney Functioning. G. Rainoldi.

129. **The Nostril Sign in Pneumonia.**—Instead of swelling outward during inspiration and dropping during expiration, the pathologic sign is that the nostrils dilate during expiration and drop during inspiration. This indicates severe intoxication from the pneumonia and weakness of muscles. It does not occur in all cases with a fatal outcome so that the absence of the sign is not necessarily a favorable omen.

Brazil-Medico, Rio de Janeiro

December 15, XXVII, No. 47, pp. 510-519

131 Campaign against Tuberculosis. C. Seidel.

Semana Medica, Buenos Aires

December 4, XX, No. 49, pp. 1301-1392

132 Cardiac Insufficiency and Asystoly. J. R. Goyena.
133 *Salvarsan Not Effectual in Rabies. C. R. Mejia.

December 11, No. 50, pp. 1393-1472

134 *Reactivation of the Permeability of the Meninges in Treatment of Syphilis of the Nervous System. J. J. Viton.
135 Rupture of the Uterus. J. C. R. Dominguez. Commenced in No. 49.

133. **Salvarsan Ineffectual in Rabies.**—Mejia tabulates the results of his experiments all showing that salvarsan even in doses proportionately much larger than is possible in the clinic had no appreciable effect on experimental rabies in eighteen rabbits. In these and in other series of animals and in rabies in human beings treated with salvarsan, inoculation of sound animals with a scrap from the medulla was invariably followed by the development of rabies.

134. **Permeability of the Meninges Important Factor in Treatment of Tabes and Paresis.**—Viton found that reactivation of the permeability of the pleura was an indispensable element in the cure of pleurisy, and his success in this line suggested that the non-permeability of the meninges was the cause of the ineffectual action of drugs in syphilitic affections of the central nervous system. By inducing a slight chemical irritation in the meninges they are rendered permeable, and he has taken advantage of this fact to good effect. Artificial serum can be injected into the spinal canal for the purpose or a mild disinfectant. Sicard recommends a mixture of 0.1 gm. of mercuric cyanid; 0.015 gm. of novocain and 2 c.c. of 5 per thousand salt solution. He injects part or all of this amount and repeats it a month later, pushing mercury or salvarsan in the interim. Viton has thus succeeded in materially relieving tabetic patients with gastric crises or lightning pains, the improvement being constant and marked. He has found mercury as effectual as salvarsan when given by this technic, while he regards it with greater confidence. The intraspinal injection is sometimes followed by pains or sensations of heat in the legs, but this is transient. When the fluid is suspected of being under high pressure he has the patient lie on his side, and he withdraws 8 or 10 c.c. of the fluid and gently injects 1 or 2 c.c. of the cyanid solution, not allowing the patient to sit up afterward for fifteen or twenty hours. Viton is professor of clinical medicine at the university of Buenos Aires.

Ugeskrift for Læger, Copenhagen

December 25, LXXV, No. 52, pp. 2079-2092

136 Abbott's Treatment for Scoliosis. E. Nyrop.

January 1, LXXVI, No. 1, pp. 1-134

137 Management of Delivery with Contracted Pelvis. (Behandlingen af Fødsel ved snævert Bækken.) L. Meyer.
138 Apparatus for Artificial Pneumothorax. A. Gjørup.